CALIFORNIA
OIL WORLD

PUBLISHED TWICE A MONTH
FOR TIMELY, COMPLETE
CALIFORNIA OIL NEWS COVERAGE

SECOND ISSUE • JUNE, 1947
VOL. 40 • NO. 12
WHOLE NO. 1730

PETROLEUM PUBLISHERS, INC.
MEMBER AUDIT BUREAU OF CIRCULATIONS
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706 SO. VALENCIA ST.
LOS ANGELES 14, CALIFORNIA
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California Oil World is published twice a month at 706 So. Valencia St., Los Angeles 14, California. Entered as Second-Class Matter, April 29th, 1944, at the post office at Los Angeles, California, under the Act of March 3, 1879. Subscription price $1 per year in U. S. and possessions, $2 in foreign countries, including Canada. Member of the Audit Bureau of Circulations.

June 30th, 1947
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Washington Highlights

Inquiry into the recent increases in gasoline prices on the Pacific Coast has been ordered here by United States Attorney General Tom Clark.

A special Federal grand jury in Los Angeles will conduct the investigation, which probably will involve the delving into records of all major oil companies and several independents.

In announcing the investigation, Clark stated "gasoline prices in the mountain states and Pacific Coast areas have averaged approximately 3 cents per gallon, exclusive of taxes, since removal of price control in July, 1946. Since a comparatively small number of companies occupy a predominant position in the two areas, concerted action to restrict competition may place in the hands of a few companies the power to fix monopolistic and non-competitive prices on the sale of gasoline."

Washington oil observers in this connection view present gasoline prices in California and other states as reflecting increased costs of crude oil, labor and equipment necessary to production. This apparently is the attitude of producers and purchasing companies throughout the country.

Former Deputy Petroleum Administrator Ralph K. Davies again made news headlines, when he said there was a danger that the country may well have to return to rationing of gasoline and heating oil.

"I had experience with rationing of gasoline," Davies said. "If it comes again, as well it may, I don't believe the public will feel too kindly toward any who have taken it upon themselves to kill a treaty that could have given some assurance that we should continue to have access to supplemental supplies from abroad. This nation no longer occupies its position as a net exporter of petroleum, but has become a net importer."

Davies is serving as a special consultant to the Interior Secretary in connection with the hearings on the Anglo-American oil agreement.

Deficiency in necessary oil field equipment is responsible for the inadequate pace of petroleum production, according to the special material committee of the Independent Petroleum Association of America.

The committee was set up by the association at its mid-year meeting last May. Since its creation the committee has been inquiring into shortages of all types of oil field material, particularly tubular items.

In a report to Secretary of the Interior Krug, the committee pointed out that underground reserves are at a record high and fully capable of providing domestic requirements of the public in the foreseeable future.

The committee asserted, however, that the rate of developing new wells was falling behind accelerated demand and that the lack of materials was aggravating the condition.

The committee contended that the export priority system must be suspended if the domestic industry is to maintain reserves and productive capacity at a safe level. Manufacturers of oil field materials have been asked by the committee to take every means possible to rehabilitate facilities and meet the industry's requirements.

It is interesting to recall that the United States industry early in the year planned the drilling of a minimum of 30,000 wells in 1947. No figures on the number drilled to date are immediately available. Indications are, however, that many more wells would have been drilled during the year than originally planned if material shortages did not persist.

After hearing a comprehensive report on the country's petroleum reserves, a House public lands subcommittee gave immediate approval to a bill to continue the Government's synthetic fuel program.

Henry Wallace at a press conference here said the United States and Great Britain "should fight" in the event Russian expansion continues to a point threatening encroachment on the rich oil fields of Saudi Arabia.

He added that Central Turkey is a sensitive point. "It is the point," he said, "beyond which Russia must know she cannot go without provoking a fight. Our own Navy would fight for the Saudi Arabian oil."

The former vice president of the United States emphasized his belief that Russia had no business moving in the direction of the vital fields. At the same time, he expressed favor of making Saudi Arabia petroleum available to all under Article 4 of the Atlantic Charter.

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Unusual Construction Features of the 30″ Gas Transmission Pipeline from the Colorado River, Near Blythe, to Santa Fe Springs, California

By M. J. Binckley
Chief Location Engineer,
So. California Gas Co.

In most cases orthodox construction methods and equipment are being used in the installation of the 30″ gas transmission line now under construction from the Colorado River near Blythe to Santa Fe Springs, California. Therefore, the following deals briefly with the methods and equipment and covers in greater detail the unusual features of the work.

During the time this project was in the blueprint stage, considerable thought was given to the possibility that due to the large diameter and the thickness of the pipe wall, unusual difficulties might require new methods of installation. However, since many high pressure transmission lines as large as 26″ diameter and wall thickness of as low as ¼″ have been laid with no serious difficulty, it appeared that our only unusual problem would be due to the added weight, the greater diameter and the longer joints. More and heavier construction equipment seemed to meet all the requirements.

The general contract for the installation of this line has been let to H. C. Price Co. of Los Angeles, California and Bartlesville, Oklahoma. The hauling and stringing of the pipe has been sub-contracted by the general contractor to Dunn Bros. of Dallas, Texas.

The job was originally divided into two divisions; Division 2 extending from the Colorado River west a distance of 143 miles to a point west of Banning and Division 1 extending from that point to the westerly terminus of the line at Santa Fe Springs. Division 2 is all in desert country except the 8 miles in the Palo Verde Valley at the Colorado River whereas the line in Division 1 traverses various types of terrain, including steep, broken brush covered "badlands", high rolling grass covered hills, fields of irrigated alfalfa and other crops, orange and walnut groves, a few miles of country roads and 11 miles in a railroad right of way. Both divisions have their share of highway, railroad and irrigation canal crossings.

The contractor started his first spread at the Colorado River about the middle of February and this spread is to work west about 155 miles to the point where the second spread started work about the middle of April. The second spread will end up at Santa Fe Springs. It is estimated that both spreads will finish work at about the same time.

Construction Features

Prior to hauling and stringing the pipe a 50 foot right of way is graded to the extent necessary to accommodate the ditchers and other construction equipment. The right of way is generally 20 feet to the left of the pipeline location, this to take the spoil bank with the remaining 30 feet to the right being the

View of pipeline from the mesa west of Blythe looking east to the Colorado River with Arizona mountain range in the background.

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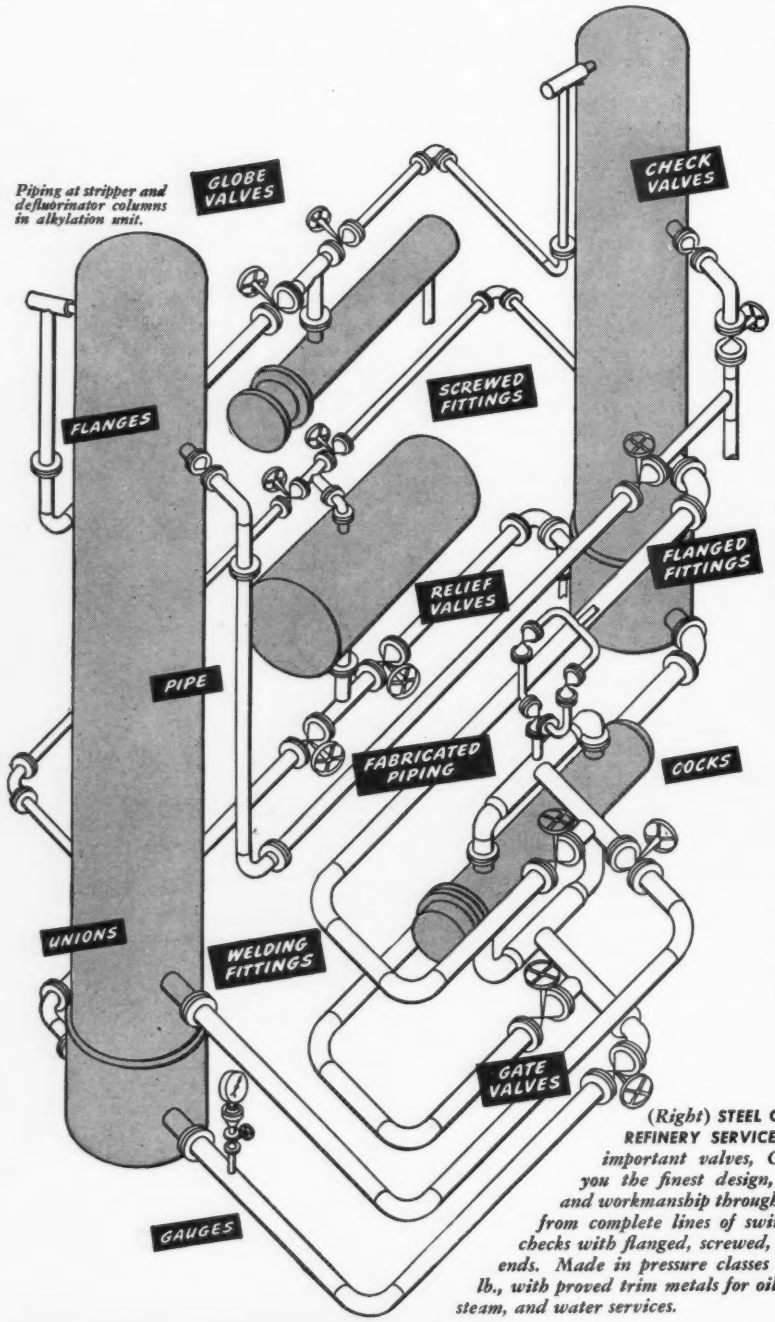

Piping at stripper and defluorinator columns in alkylation unit.

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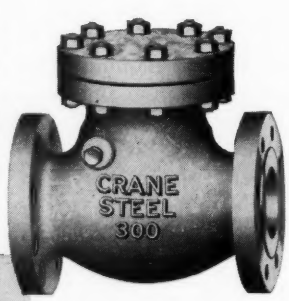

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working strip. At the same time all necessary additional access roads are constructed or existing roads improved to permit hauling the 60 foot joints. In many places "shooflies" are required to move the equipment across the many deep canyons and gullies. The ground which varies from fine river silt, through loam, fine and coarse gravels, sedimentary rocks to granite, presents a real problem to the contractor both in grading the right of way and in ditching. RD-8 bulldozers are used in the grading operations, the number required varying with the roughness of the country and the type of soil. In some sections, one tractor is capable of making several miles of finished right of way per day while in one other section 7 bulldozers were able to complete less than one mile per day. The trenching is done with Buckeye 42 trenchers except in rock and coarse gravel where back hoes are used.

Pipe

The pipe is 30" O.D. in 60 foot lengths of four wall thicknesses ranging from 9/32" to 3/8". The protective coating consists of a primer coat, one coat of coal tar enamel having an average thickness of 3/32" and one wrap of 15# asbestos felt wrapper. Eleven miles of pipe in the railroad right of way has a double wrapping. A total of 8000 feet of ½" wall pipe with 1" of Gunite coating is to be installed under important streams.

The pipe is coated in the yard in Los Angeles and hauled to the job on trucks and trailers fitted with special bolsters lined with rubber lining from airplane gasoline tanks. Six joints are carried on each load, three of which rest in the rubber lined bolsters, with the other three being pyramided above with strips of rubber at three or four points, separating the joints and preventing damage to the coating. Talc is applied to all rubber surfaces as a further precaution against damage.

The pipe is unloaded at the right of way by a tractor equipped with a long side boom. The pipe is placed on bags of sand or saw dust to prevent damage to the coating by contact with the ground. As a result of the many precautions taken in handling the pipe, very little damage has been done to either the pipe or the coating.

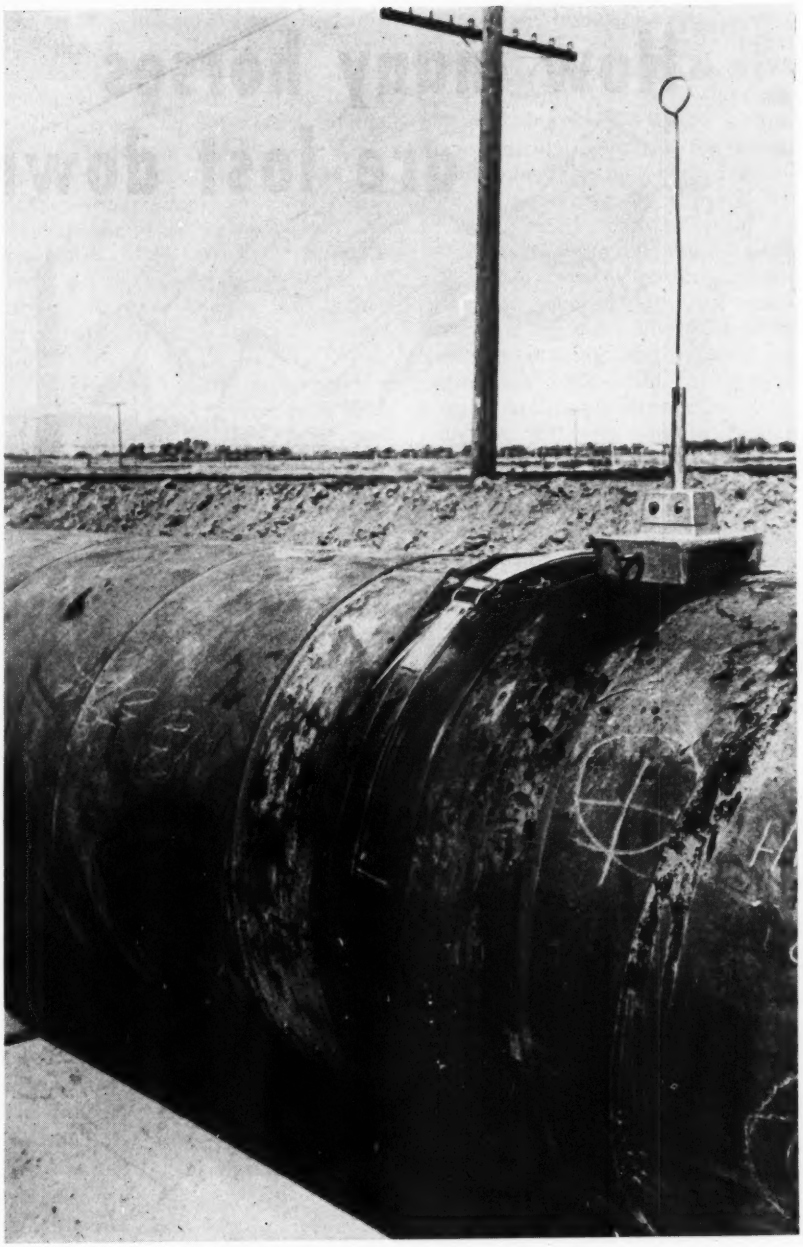

Photo shows the equipment used to insert and center the radium capsule in the line. The belt carrying the films shows clearly in the photo.

On the desert, the pipe is strung for a distance of approximately 100 miles ahead of laying operations and due to the hot weather the coating softens to the extent that it is difficult to handle the pipe in the line up and lowering operations without damage to the coating. Tests were made in the desert on two sections of pipe, one as delivered to the line, and another to which a coat of whitewash had been applied. It was found that on a day with atmospheric temperature of slightly under 100°F. the temperature of the section of pipe without whitewash was approximately 50° higher than the whitewashed section. The temperature of the whitewashed section was only slightly above air temperature. Based on this test all pipe in the desert areas is now being whitewashed and this has greatly reduced the damage to the coating.

Welding

All welding is done with the electric arc making three passes and

How many horses are lost down the hole?

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is done by the "stove-pipe" method. An internal hydraulically operated expanding clamp is being used for lining and holding the pipe during the running of the stringer bead. This clamp is mounted on rubber tired wheels and is propelled by a small electric motor drive, the source of current being a small portable generator. The hydraulic jack is operated by a 60 foot handle which extends through the section to the front.

Four stringer bead welders are used for running the stringer beads. When a joint is lined up, two welders start running the stringer bead and when this bead is about half completed the clamp is released and moved ahead to line up the next joint. The other two welders then start on this joint, the clamp being moved ahead when the bead is about half completed to line the next joint for welding by the first pair who by this time have completed their joint and have "leap frogged" the second pair. After completion, each stringer bead is cleaned and examined for burn throughs or "frog eyes" or any other defects. All defects found are repaired by a stringer bead repair welder who preheats the weld and then makes the repair necessary. Occasionally a Gamma Ray photo is taken of a stringer bead. The weld is then completed by the "firing line" welders who make the two additional passes.

All welders are tested before being put to work, the qualification tests being in accordance with the qualification tests of the American Welding Society. In addition, Gamma Ray pictures are taken of each qualification test weld.

In planning the job it was decided to Gamma Ray about 10% of the field welds or at least one weld per welder per day. After the contract had been let, a set of Standards of Acceptability was prepared and agreed to by the contractors welding engineer, the Gas Company's engineers and the representatives of the company making the Gamma Ray pictures. These standards have proven entirely satisfactory and the use of the Gamma Ray has received the full acceptance of the contractor and the welders themselves. At the start of the job a few welds were cut out to test our standards, but this practice has been discontinued since in all cases the interpretations made from the pictures were found to be correct. All films are available to the contractor and to his welders in order that they may see the defects which exist and thus disqualify the weld according to the standards. It is very seldom that a weld which fails to meet the standard is so poor that a few inches of repair will not bring it within the standard.

The radium capsule is inserted in the pipe line. The films are each about 16″ long and 6″ wide and overlap each other slightly as they are fitted into the belt. The belt is centered over the weld and wrapped around the pipe. A set of lead numbers denoting inches is also wrapped around the pipe clockwise in the direction of laying operations with zero on the top center of the pipe. When the films are developed, the lead numbers show on the negative and defects are easily located by measuring from the top center of the pipe. The hole drilled in the pipe for inserting the capsule is a 1″ hole spaced about 6″ from the weld. This hole is repaired by welding a 1½″ round patch stamped from 30″ pipe of ⅜″ wall thickness over the hole. The fillet welds used in making the repairs are three pass welds and the pipe is slightly preheated before making the weld. A 400 mg. radium capsule is used for making the negative and the exposure time varies from 35 to 45 minutes, depending on the wall thickness of the pipe. It is possible to have a report on a weld within about 1½ hours after the

Close-up of top welder at work.

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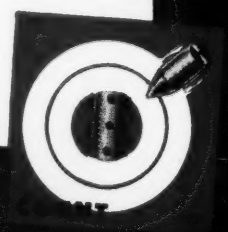

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weld is completed and to then start making any repairs necessary.

Bends and Angles

Bends using the wrinkle method are being used for horizontal or vertical angles less than 10° total deflection. At the start of the project bends were made by the hot wrinkle method but are now being made with a cold wrinkle machine.

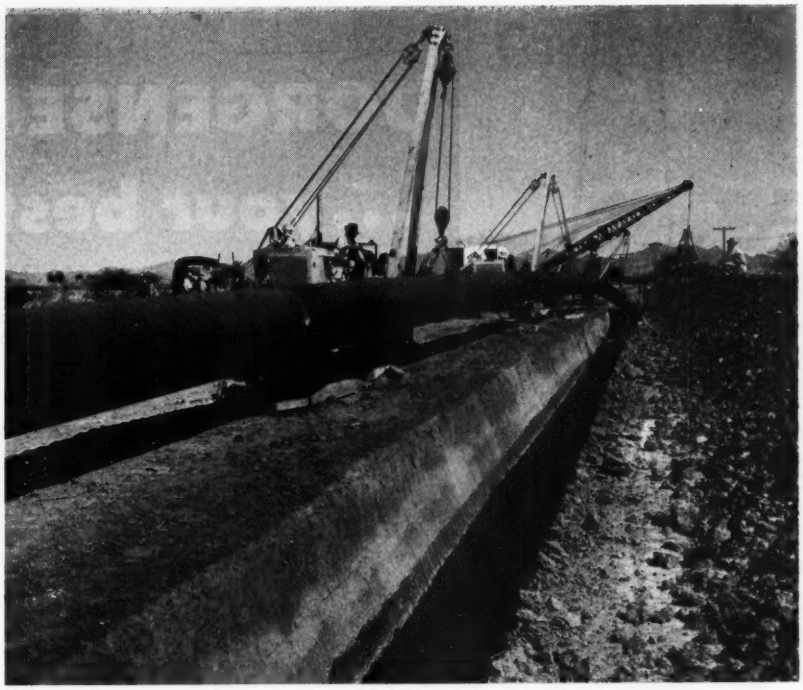
Angles of greater than 10° deflection are made by using sections of 30" weld ells which are cut radially to give the desired angularity. Pups of line pipe are generally welded to the section of weld ell, by welding both inside and outside and this unit is then welded into the line. This method of making angles has been found to be entirely satisfactory.

Backfill

After the pipe has been lowered into the trench it is shaded during the early morning hours of the following day. The shading equipment used consists of a small tractor with a long side arm to which is attached a shallow scoop about 5 feet long. The scoop, operated by one man, pulls the spoil from across the trench and at right angles to the trench, flowing the material over the pipe to a depth of about 10". After each scoopful the tractor is moved ahead by the other operator a distance of about 4 feet. This same equipment later completes the backfill, being followed by a bulldozer which dresses up the right of way.

In planning the job it was anticipated that about 5 miles of line would be in rock where there would be insufficient fine material available for padding the ditch and shading the pipe and this condition was provided for in the specification. However, during right of way grading operations and later when the trench was excavated we found that the desert surface conditions did not always exist at trench depth and that our spoil bank was composed of material much too large to safely backfill on to the coated pipe.

It was immediately realized that to prevent damage to the protective coating it was necessary to devise some means of segregating the available fine material for use as shading over the pipe. The need was for something which would work with the backfiller and at the same rate since the time available for shading operations was limited to the early morning hours.



Side-boom "Cats" lower section of Biggest Inch into ditch, near Blythe, Calif.

A piece of equipment was designed for this purpose and while it is not perfect it has shown possibilities and under certain conditions is doing a very good job. It consists of an 8 foot length of 2" pipe reinforced by a piece of railroad iron. Bars of cold rolled steel 1½" x ½" alternately 7 and 8 feet long are looped around the 2" pipe. Each bar has a 1" x 2" shoe at the trailing end to give an upward lift as the bars are moved forward. Each bar is free to move vertically and

(Continued on Page 56)

Pipe crew lines up pipe in preparation for welding. Note new type interior clamp at right.

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Multi-Column Distillation of Natural Gasoline

By

By Frank J. Lockhart
Dept. of Chemical Engineering,
University of Southern California

June Meeting

The separation of natural gasoline into its various components by distillation has received much attention with respect to the design of individual columns, but little attention has been given to the possible sequences of distillation columns which may be used to produce three or more products. This paper presents economic comparisons of a number of possible process arrangements of distillation sections in present day natural gasoline plants. Emphasis is placed upon the sequence of deethanizing, depropanizing, deisobutanizing, and debutanizing of natural gasoline.

Product Quality

Calculations were made in all cases for the following product specifications: (1) Natural gasoline with 12 lb. R.V.P., containing approximately 1% butanes; (2) n-Butane, containing 5% Isobutane and 3% pentanes; (3) Isobutane, containing 5% n-butane and 3% propane; (4) Commercial propane, containing about 2% ethane and 2% butanes; (5) Ethane and lighter, containing sufficient propane to obtain condensation for reflux at 450 psig and 100°F.

Estimating Procedure

Since this paper is concerned only with the comparison of different sequences of columns to obtain the same products, incremental costs are used instead of total costs. Equipment such as vapor lines, reflux lines, reflux drums, valves, instruments, and pumps which are common to all sequences are eliminated from consideration.

(1) SIZING OF DISTILLATION COLUMNS

Process engineers generally use short-cut approximate methods of design for economic comparisons. The design procedure given here has been used for a number of years with satisfactory results. This procedure is recommended only for preliminary estimations, although some distillation columns have been designed on this basis (and operated successfully). The final process design should be made by more accurate methods.

The procedure recommended for estimating purposes includes the calculation of the minimum number of theoretical liquid-vapor contacts and the minimum reflux ratio, which represent the limiting or boundary conditions of actual operation. The minimum number of theoretical liquid-vapor contacts is calculated from the Underwood (10) or Fenske (5) equation:

$$N^*_m \log \alpha = \log \left(\frac{x_{LKD}}{x_{hKd}} \cdot \frac{x_{hKW}}{x_{LKW}} \right) \qquad (1)$$

where N^*_m = minimum number of theoretical liquid-vapor contacts (includes reboiler and partial condenser if present)

α = average relative volatility of the light key component referred to the heavy key component.

x_{LKD}, x_{LKW} = mol fractions of the light key component in the overhead product and bottoms product, respectively.

x_{hKD}, x_{hKW} = mol fractions of the heavy key component in the overhead and bottom products, respectively.

The minimum reflux ratio required for the separation cannot be determined accurately for multicomponent mixtures by any short, simple method. The Underwood equation (10) is accurate for binary mixtures, but is conservative for multicomponent mixtures. Equation (2) applies when the feed is at its bubble point, being identical with the corresponding Underwood equation for binary mixtures.

$$R^*_m = \left(\frac{x_{LKF} + x_{hKF}}{\alpha - 1} \right) \left(\frac{x_{LKD}}{x_{LKF}} - \alpha \frac{x_{hKD}}{x_{hKF}} \right) \qquad (2)$$

where R^*_m = approximate minimum reflux ratio calculated by Equation (2) equals L^*_m/D.

x_{LKF}, x_{hKF} = mol fractions of light key and heavy key components, respectively, in the feed to the column.

All other symbols as defined in Equation (1).

The approximate minimum reflux ratio calculated from Equation (2) is compared with the true minimum reflux ratio in Figure 1, the points shown being for multicomponent distillations reported in the literature (2) (3) (6). It is recommended that for estimating purposes, the value of the minimum reflux ratio be taken as 1.2 times the value of R^*_m calculated by Equation 2 for multicomponent distillations. It should be emphasized that this procedure gives a value of minimum reflux ratio accurate to about 15% only when the feed to the column is at or near its bubble point.

The relationship between the actual reflux ratio and the number of theoretical liquid-vapor contacts required for the separation is given in Figure 2. This relationship is a simplified form of the Brown and Martin (2) and the Gilliland (7) correlations, and is accurate for most cases encountered in industry

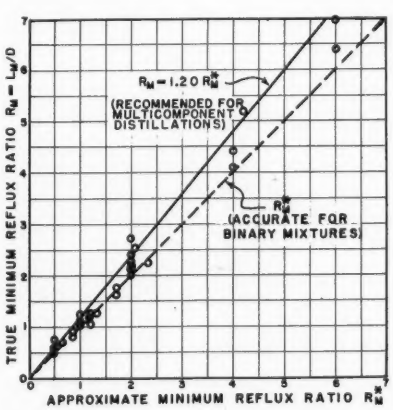

Figure 1—Accuracy of Minimum Reflux Calculation Recommended for Estimating Purposes.

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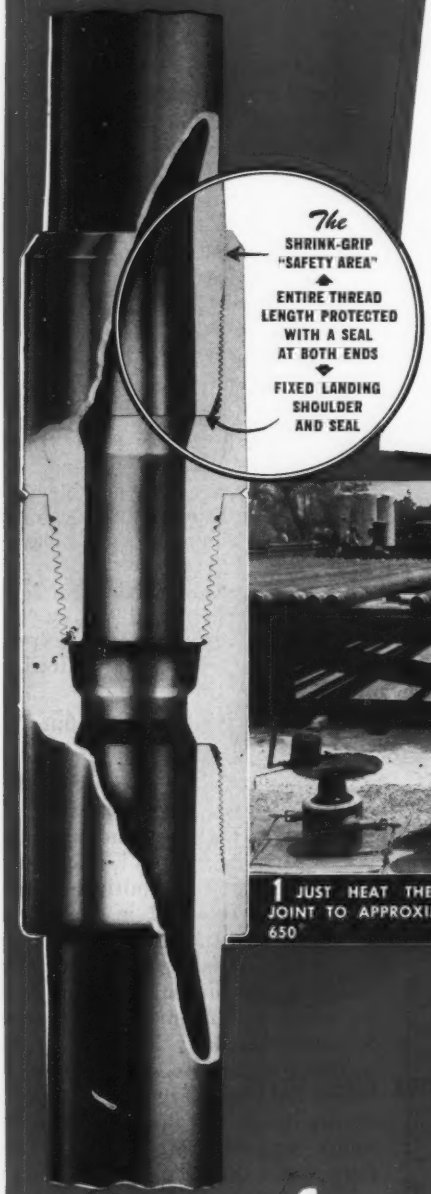

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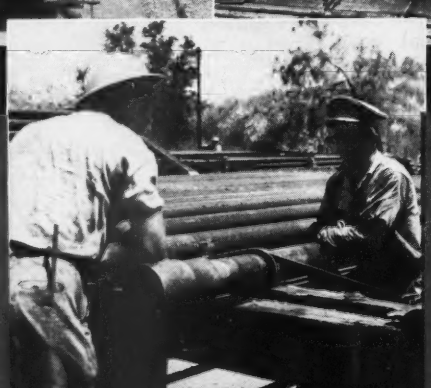

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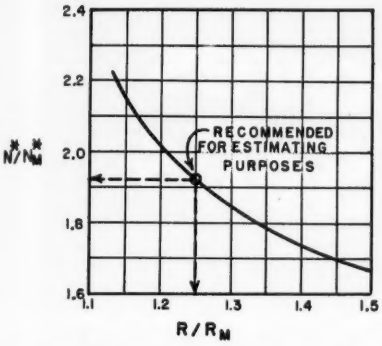

Figure 2—Relationshpi Between Actual Reflux Ratio and Number of Theoretical Liquid-Vapor Equilibrium Contacts.

(the feed at or near its bubble point, the minimum reflux ratio between 0.5 and 15, and the minimum number of theoretical liquid-vapor contacts between 6 and 50). It is recommended that for design purposes the actual reflux ratio be taken as 1.25 times the minimum reflux ratio, because this point corresponds with the economically optimum operation of most hydrocarbon distillation columns.

Overall plate efficiencies, used to convert the number of theoretical liquid-vapor contacts to the number of actual bubble-cap plates, may be obtained conveniently from the correlation of Drickamar and Bradford (4) or that of O'Connell (8).

Plate spacings of 24" were used in all calculations in this paper. Column diameters were estimated by the correlation of Souders & Brown (9) as modified by Brown and Lockhart (1), and rounded to the next larger half-foot.

Design pressures were considered as 50 psi higher than operating pressure. Deethanizers were limited to 450 psig operating pressure in all cases.

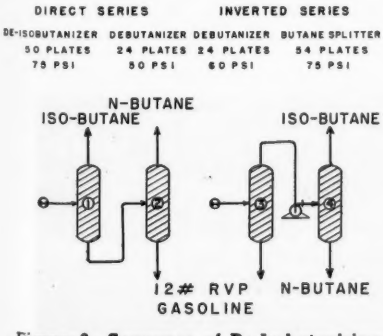

Figure 3—Sequence of De-Isobutanizing and Debutanizing Natural Gasoline.

(2) SIZING OF EXTRANEOUS EQUIPMENT

Heat exchanger loads were determined by conventional heat balances. All product and reflux streams were cooled to 100°F, while cooling water in all cases had an allowable temperature rise of 30°F. The reboilers for columns used 150# steam, with the control valves in the steam line 70% opened in all cases, except those specifically mentioned later.

The only pumps considered in this study were those required to transfer feeds to columns from lower-pressure accumulators.

(3) COST ANALYSES

Fixed charges (depreciation, maintenance, etc.) were taken as 20% per year of the initial investment costs, which include the costs of columns, heat exchangers and pumps on an incremental basis. The cost of columns erected in the Los Angeles area and complete with insulation, ladders, and platforms, was taken as 20¢/lb. total weight, a figure in agreement with turnkey estimates made in 1946. The costs of heat exchangers varied from $4-8 per sq. ft. transfer area, installed basis, in accordance with 1946 quotations. The cost of pumps and drivers were also in accordance with 1946 estimates, installed with connecting piping.

Operating charges were based on the following unit cost figures:

150# steam	20¢/M lbs.
Cooling water	5.0¢/M gals.
Power	0.5¢/KW Hr.
Fuel	15¢/MM BTU

(4) SCOPE OF THE CALCULATIONS

Production of the five streams specified previously requires four distillation columns in most instances. It is possible to arrange these four columns in at least fourteen different sequences. An attempt has been made to simplify the comparisons of different sequences by considering a number of separations requiring two columns for three products. Specifically, the following cases were investigated: (a) Separation of depropanized gasoline into isobutane, n-butane, and 12# RVP gasoline; (b) Separation of deethanized gasoline into propane, isobutane and deisobutanized gasoline; (c) Separation of raw natural gasoline into ethane and lighter, propane, and depropanized gasoline. Results of the study are presented in that order.

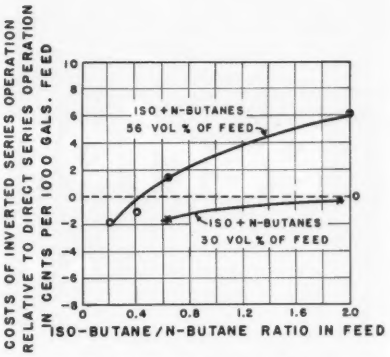

Figure 4—Costs of Inverted Series Relative to Direct Series for Production of Iso-Butane, N-Butane, and 12# RVP Gasoline.

Deisobutanizing and Debutanizing Gasoline

After propane and lighter constituents have been removed, two distillation columns are required to produce isobutane, n butane, and 12# RVP gasoline. The columns may be placed in either the so-called "direct" series or the "inverted" series as indicated in Figure 3. These two sequences have been compared for the feed compositions and rates indicated in Table I.

TABLE I
FEED STOCKS CORRESPONDING WITH FIG. 3 & 4

	Feed A	Feed B
Rate, Gal/Hour ..	2200.	4100.
Composition, Vol. %		
Propane	0.4	0.2

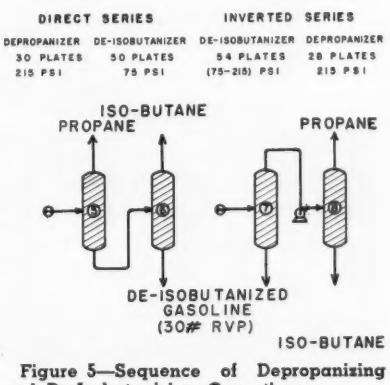

Figure 5—Sequence of Depropanizing and De-Isobutanizing Operations.

Performance Proves ... Service Sells

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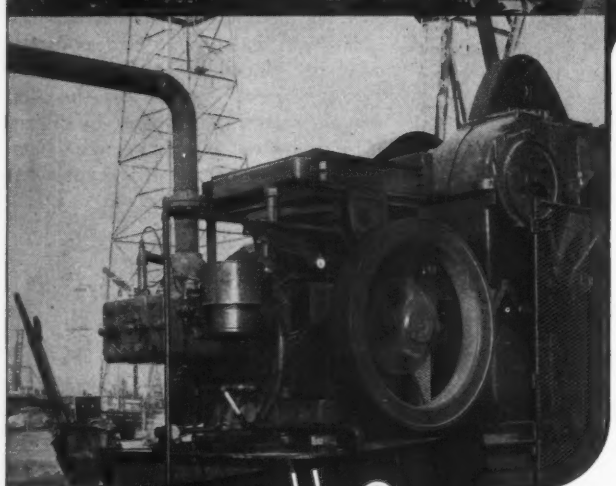

Years of reliable and trouble-free service have proved the performance stability of LUFKIN COOPER-BESSEMER Engines . . . for any pumping job. Equally important to an operating company is the LUFKIN service that stands behind every installation. LUFKIN sales engineers are anxious to work with you in selecting the proper LUFKIN COOPER-BESSEMER engine for your particular requirements and in addition they are constantly on call for any service needs. It all adds up to satisfaction and that has been and always will be the best way we know of to assure value received for our customers.

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LUFKIN FOUNDRY & MACHINE CO.

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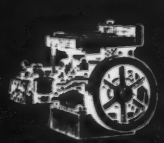
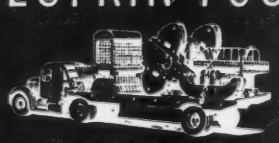


LUFKIN COOPER-BESSEMER ENGINES



LUFKIN OIL FIELD AND INDUSTRIAL TRUCK TRAILERS

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Isobutane .....)	56.5	) 30.3
n-butane .....)		)
Isopentane	16.9	27.2
n-pentane	8.8	14.2
Heavier	17.4	28.1
	100.0	100.0

The feed rates listed in Table I were selected so that all column-diameters would be at least two feet. Feed B is a heavier stock than Feed A; it also represents the total feed where Feed A is the net feed and two volumes of gasoline are recycled to the still per volume of net gasoline product.

Results of this study are shown in Figure 4. It is to be noted that the costs given in Figure 4 represent the differences between the costs of operation of the inverted series and the direct series for the same feed and products. The ratio of isobutane to n butane in the feed is ordinarily between 0.2 and 0.7 for natural gasoline stocks, but the curves were extended to a ratio of 2/1 to include many refinery operations.

The inverted series compared with the direct series has in general higher fixed charges, principally due to the feed pumps required for the second column, and a lower operating cost, principally due to the reduction in steam consumption. It is interesting to note that the reflux rates are about 10% lower for the inverted series operations.

The following conclusions may be applied to new plants and also to existing plants in which the addition of a new column is planned to separate mixed butanes into isobutane and n butane:

(1) If the isobutane concentration in the depropanized gasoline is relatively high, say more than 30 vol. %, as in some refinery operations, the direct series is preferred.

(2) If the isobutane concentration in the repropanized gasoline is relatively low, say less than 15 vol. %, the inverted series is preferred.

(3) If the gasoline concentration in the depropanized gasoline is relatively high, say more than 70 vol. %, the inverted series is preferred.

(4) For cases not covered by the first three conclusions, either series may be used without undue loss. The optimum sequence must be determined for each individual problem, and will depend upon such factors as the specific feed rate, the sizing of equipment, and the unit cost figures.

Depropanizing and De-Isobutanizing Operations

The separation of the deethanized feed into propane, isobutane, and de-isobutanized gasoline may be accomplished by either a direct series or inverted series as shown in Figure 5. These two sequences have been compared for the feed compositions and rates given in Table II.

TABLE II
FEED STOCKS CORRESPONDING WITH FIG. 5 & 6

	Feed C	Feed D
Rate, Gal/Hour ..	2570.	4500.
Composition, Vol. %		
Ethane	0.4	0.2
Propane .....)	36.3	) 21.5
Isobutane .....)		)
n butane	28.0	16.9
Isopentane ...	13.8	23.3
n pentane	7.2	12.8
Heavier	14.3	25.3
	100.0	100 0

The feed rates listed in Table II were selected so that all column-diameters would be at least two feet. Feed C and Feed D of Table II correspond to Feeds A and B of Table I. Feed D represents the total feed to the depropanizer where Feed C is the net feed and two volumes of 12# RVP gasoline are recycled to the still per volume of net gasoline product.

Figure 6 shows the results of this comparison and is similar to Figure 4. The ratio of propane to isobutane in the feed is ordinarily greater than 1.0 for natural gasolines, but the curves were extended to a ratio of 0.3/1 to include many refinery operations. The inverted series compared with the direct series has in general higher fixed charges and lower operating costs. Reflux rates for the inverted series are about 5% lower than those for the direct series.

The higher pressure-level of the inverted series in Figures 5 and 6 apparently has little significance in the pressure range of 50 to 215 psi.

The following conclusions are obtained from Figure 6:

(1) If the propane concentration in the deethanized feed is relatively high, say more than 20%, the direct series is recommended.

(2) If the propane concentration in the deethanized feed is relatively low, say less than 10%, the inverted series is recommended.

(3) If the de-isobutanized gasoline amounts to more than 80% of the deethanized feed, the inverted series is recommended.

(4) For cases not covered by the above recommendation, either series may be used with very little difference in cost.

Deethanizing and Depropanizing Operations

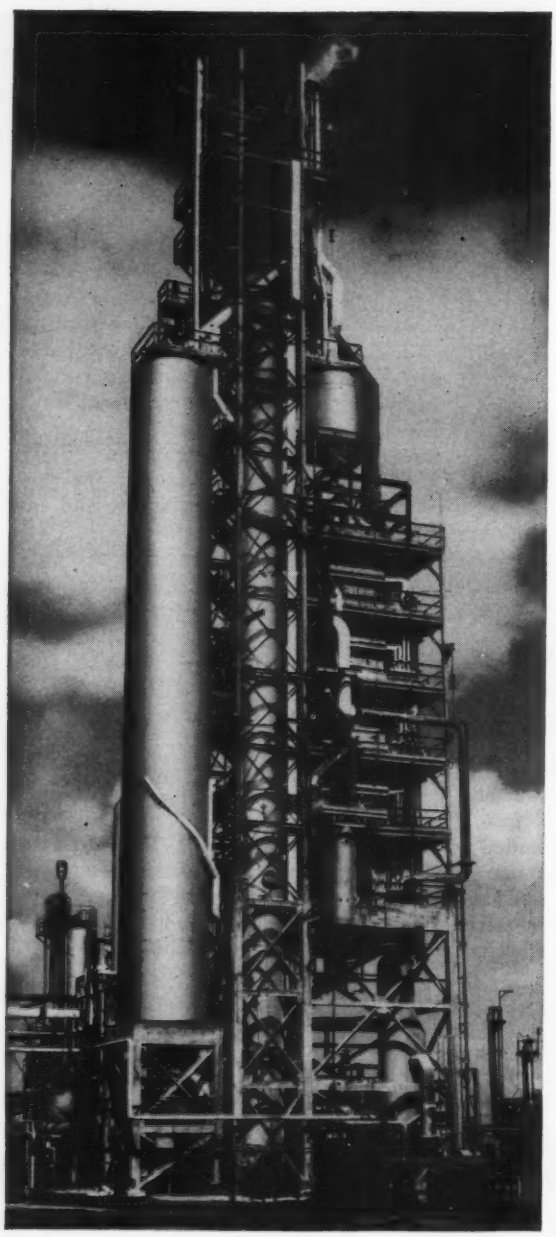
The removal of ethane-and lighter fractions and propane from natural gasoline may also be compared with respect to the direct series and the inverted series operations, analogous to the sequences shown in Figures 3 and 5. The significant difference is the large change in the pressure-level of direct series and inverted series of this case.

The comparison of the direct-and inverted-series for deethanization and depropanization is limited to a comparatively small range of ethane/propane ratios in the feed because of external factors which are not present in the previous comparisons. If the ethane/propane ratio is greater than approximately 0.6/1, the large amount of ethane and the accompanying methane makes it impossible to obtain complete condensation at 100°F and 450 psig of the overhead product of the first column in the inverted series. A compressor must be used to feed

TABLE III
ETHANE/PROPANE RATIO IN FEED GREATER THAN 0.6

	Direct Series	Inverted Series
Operating Pressure, psi	(1) 450, (2) 215	(1) 450, (2) 450
Compressors	none	One
Heat Supply required for Reboilers	(1) 150# Steam	(1) 400# Steam or Fired reboiler
	(2) 150# Steam	(2) 150# Steam

New Leonard 3,000 B/D TCC unit now on stream!



FIRST POST-WAR SMALL-SCALE CATALYTIC CRACKER WAS COMPLETED 6 MONTHS AFTER BREAKING GROUND

On March 18, only six months from the time ground was broken, a new 3,000 b/d TCC unit went on stream at Leonard Refineries, Inc., Alma, Michigan and its markedly successful operation is being noted with interest by the entire refining industry.

It is significant that this progressive, rapidly expanding refinery selected TCC equipment for its entry into catalytic cracking. For this new small TCC is the first post-war catalytic cracker specifically designed to meet the competitive needs of the small refiner. Compact but complete, it includes all the essentials of cat crackers many times its size. Yet it is actually simpler, with an integral elevator design so that only one elevator is required for both spent and regenerated catalyst.

Houdry will gladly discuss details of this small TCC with other interested refiners.

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the second column in the inverted series.

The qualitative comparison given in Table III indicates that the direct series is preferred from an economic viewpoint.

On the other hand, if the ratio of ethane/propane in the feed is less than 0.25/1, as is the condition where deethanization of rich oil is employed in the absorbing-tripping cycle (11), it is possible to withdraw commercial propane as a sidestream from the deethanizer. This is due to the high volatility of ethane referred to propane (about 2.5/1). The one column operation, withdrawing propane as a sidestream, requires a fired reboiler or about 400# steam, but this is more than compensated for by the saving of one distillation column and its auxiliary equipment.

It is believed necessary to compare the inverted series with the direct series only when the ethane/propane ratio in the feed is between 0.25 and 0.60. One actual comparison at the ratio of ethane/propane = 0.32 (ethane plus propane being 23% of the feed) indicates that the cost of inverted series relative to direct series operation is about + 4.0 cents per 1000 gallons of feed. This incremental cost is due to higher pressure column and the additional pumps required for the inverted series.

It is recommended that in a new plant, the ethane-and-lighter fractions of the natural gasoline be removed in the first column of the distillation series.

Many existing plants do not separate ethane from propane, either because of the small ethane content or the desired low recovery of commercial propane. If it becomes necessary to install a deethanizer because of anticipated higher ethane concentrations or desired increased recovery of propane, two general recommendations can be made.

(1) The use of the inverted series is more economical if the overhead product from the existing column can be completely condensed, because of the smaller diameter needed for the new deethanizing column. Many plants have found it possible to use sections of pipe for such a deethanizing operation, the pipes being either packed or fitted with piston-type bubble plates.

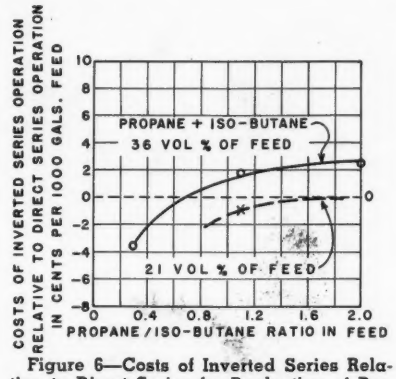

Figure 6—Costs of Inverted Series Relative to Direct Series for Production of Propane, Iso-Butane, and De-Isobutanized Casoline (RVP = 30#).

(2) If the overhead product from the existing column cannot be condensed, it is believed that direct series is more economical, although this case should be investigated for each specific separation. If direct series operation is to be used, the new column must operate at 450 psi and be sufficiently large to handle the large liquid load. If inverted series be used, compressors are required to feed the second column, and the new column must operate at 450 psi but will have a smaller diameter because of the smaller liquid load.

Summary and General Conclusions

The over-all operation of distillation sections containing three or four columns may be considered by combining the "unit" studies made above. General conclusions for typical natural gasoline plants are indicated in Figure 7.

Conclusions reached in the unit studies also apply to many refinery operations. For example, the feed to the distillation section of a typical butane-alkylation unit has a low propane/isobutane ratio, a high isobutane/n butane ratio, and a small concentration of gasoline. Figures 4 and 6 indicate that the preferred sequence of distillation is separation between isobutane and n butane in the first column, with the overhead product sent to a depropanizer, and the bottoms product sent to a debutanizer.

The rule-of-thumb saying so often heard, that it is better to reduce the pressure level of the distillation system as soon as possible (implying direct series operation), appears to be generally true only for large increments of pressure in the high pressure range above about 200 psi. In other cases, the relative amounts of the products is the deciding factor. If the lightest product is present in large amounts, direct series is preferred; if the heaviest product is present in large amounts, inverted series is preferred.

Figure 7
CONCLUSIONS FOR NATURAL GASOLINE PLANTS

1. **Removal of Ethane and Propane**
   - A. **New Plant—Use direct series.**
   - B. **Addition to plant with existing Depropanizer, use inverted series, if Ethane content is not too high.**
2. **Removal of Iso-Butane and normal Butane**
   (New plant or addition to existing plant)
   - A. **Use direct series (optional).**
   - B. **If have large gasoline recycle to still, use inverted series.**

LITERATURE CITED

1. Brown and Lockhart, Trans. Am. Inst. Chem. Engrs. **39,** 63 (1943)
2. Brown and Martin Ibid **35,** 679 (1939)
3. Colburn, Ibid, **37,** 805 (1941)
4. Drickamer and Bradford, Ibid **39,** 319 (1943)
5. Fenske, Ind. Eng. Chem. **24,** 482 (1932)
6. Gilliland, Ibid **32,** 1101 (1940)
7. Gilliland, Ibid **32,** 1220 (1940)
8. O'Connell, Trans. Am. Ins. Chem. Engrs. **42,** 741 (1946)
9. Souders and Brown, Ind. Eng. Chem. **26,** 98 (1934)
10. Underwood, Trans. Inst. Chem. Engrs. (London) **10,** 119 (1932)
11. Whistler, Calif. Oil World, First Issue Oct. 1946, p.15.

Edison Test Gets Ready

United Exploration Co. is preparing to drill a well in the Edison area in Sec. 26-30s-29e. C. B. Webster is president of the company, and Arthur F. Peterson, engineer.

Kettleman Hills Project Redrills

Redrilling has reached 8077 ft. in Standard of California's No. 73-30V in Sec. 30-23s-19e in the Middle Dome wildcat area of Kettleman Hills, with attention now being given to equipment repairs. The project went originally to 12,389 ft. for a discovery in the Eocene. The true productive worth of the well has not been revealed due to drill pipe fish in bottom portion of the hole.

BROWN DRILLING
COMPANY
LONG BEACH, CALIFORNIA

With Drilling Contractors

P. H. Frank, head of P. H. Frank, Inc., contract driller, has organized Oilfield Rentals, Inc., in Bakersfield. The new concern will engage in oil field construction and specialize in pipeline work and foundation and rig building.

Clyde Hall Drilling Co. is drilling Kuhn No. 81 in the Premier area for Independent Exploration Co.

Seaboard Oil Co.'s current test in Bacon Hills is a contract job to Santa Fe Drilling Co.

Fillmore Drilling Co. is completing Union Oil Co.'s Smith No. 63-28 in the West Edison area.

In the Santa Maria field, Santa Maria Drilling Co. is rigging pump to its contract job with Sunray Oil Corp., Tonascia No. 1.

The Andrew Lucas wildcat on the Pfeiler lease in the Oxnard area is moving ahead under the guidance of Abbott Jenks Drilling Co.

K. L. Kellogg & Sons of Long Beach is drilling two interesting tests for Honolulu Oil Corp. in the Goleta area.

Tracy Harkness is the contractor on Apex Petroleum Corp.'s Cattani No. 4 in the Mountain View area.

Dunlap & Graham has completed a well for Hellman Estate in the Seal Beach field.

Buaas Drilling Co. is contractor for Western Gulf Oil Co. on U.S. No. F-12 drilling in the Oak Canyon field.

Bell & Burden, Inc., recently organized contract drilling organization, is maintaining headquarters at 420 South Alameda St. in Compton.

Camay Drilling Co. has been scoring a completion every 12 days for Adams Oil Co. in the Edna area of San Luis Obispo County, with only one string of tools operating. Additional strings are listed for early starting. Camay's work for Adams is under the direct supervision of E. R. Love, general superintendent.

Contractor on Amerada Petroleum Corp.'s interesting project in the West Newport area is Hoyt Drilling Co. The well is known as Farnsworth No. 46-7.

Pacific Western's important deep test on a 48,000 acre lease in Carbon County, Utah, is a San Joaquin Drilling Co. job. The going at this location is reported extremely tough, with 315 bits used up in carrying the hole to present depth near 10,150 feet. The drilling concern maintains headquarters in the Los Angeles Subway Terminal Bldg.

E. J. Stansbury, Roy D. Coffee and Glenn Fisher, widely known members of the San Joaquin Valley oil fraternity, are officials of the new Kern Exploration Co., a contract firm on Rosedale Highway in Bakersfield.

Emmons & Nichols is the banner of a new contract organization of Taft.

M. I. Fillmore and H. G. Edelman of Bakersfield have organized the Fillmore Drilling Co. A general contract business will be conducted.

Fowler Drilling Co. has been given contract to redrill a well for Hancock Oil Co. in the Long Beach Harbor area. One of Fowler's most interesting jobs is M. T. Grubb's venture atop Snowball Mountain near Carpinteria.

Loffland Bros. Co. has the contract to deepen K. C. L. No. L-1 in the San Emigdio area for Continental Oil Co. Loffland is drilling Lillis No. 85-36 near Panoche Creek for Seaboard Oil Co.

California Commercial Drilling Co. has been awarded contract to drill two new wells for Obispo Oil Co. in the Midway-Sunset field in Sec. 32-12n-23w.

McKeon and Young have let contract to Gene Reid Drilling Co. for their scheduled prospect job in Sec. 29-30s-29e at Edison. Other current Reid jobs include Hamilton and Sherman's Beer No. B-2 at Blackwells Corner, McKee and Womack's No. 1 on the Cuyama Rancho, and Morton and Kohlbush's Ogier No. 1 in the Round Mountain area.

George Terry Drilling Co. has the contract to put down a well for W. T. and Porter Sesnon in Sec. 2-21s-14e in the Coalinga area.

Brown Drilling Co. will be the contractor on Cleveland Oil Co.'s Machado No. A-6, a deep well in the Baldwin Hills sector of the Inglewood field.

Rocky Mountain Drilling Co. is repairing equipment on Standard of California's No. 73-30V in Kettleman Hills Middle Dome area, a redrill job. Rocky Mountain has a dozen jobs going in various parts of the state.

Rushing & Roberts has been contracted to drill Richfield Oil Corp., Ojai No. 46 in the Ojai area, Ventura County.

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Speed-Trip POWER SLIPS

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Speed-Trip Power Slips standing while 7" casing is being lowered into the hole.

EXIT THE CASING SPIDER *for all sizes up to 7" O.D.*—*Speed-Trip* Power Slips handle drill pipe, casing and tubing in all sizes from 2⅜" to 7" O.D. Since most of the talk about *Speed-Trip* Power Slips has revolved around their remarkable performance in speeding up the time-consuming round trip, some operators have wondered just how they perform when it comes to running casing. Here's the answer: Performance is fast and smooth whether you're handling casing, drill pipe or tubing. The slip ring has a full 16" opening, so casing in sizes through 7" O.D. passes with no trouble at all. Thus for casing no larger than 7", *Speed-Trip* Power Slips replace the casing spider.

A TOUCH OF THE DRILLER'S TOE—*Speed-Trip* Power Slips are air operated. The control valve is located at the driller's toe. A touch of his toe and the slips rise to standing position. Another touch and they lower to set position. Power is applied to set the slips as well as to raise them, so positive centering of the pipe is always assured.

UNIFORM, NON-CRUSHING GRIP—The three long slips have replaceable inserts, designed with teeth that have positive, uniform grip without crushing or otherwise damaging the pipe . . . even when the heaviest strings are being handled.

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BJ MEANS ENGINEERED OIL TOOLS

Personalities IN THE NEWS

Minckler Elected Executive Vice-President of General Petroleum

The board of directors of General Petroleum Corporation has elected R. L. Minckler executive vice-president, it is announced by S. J. Dickey, president.

Additional honors came to Mr. Minckler last week when he was one of three western oil men appointed by Secretary of the Interior Krug to the government's new 15-man Military Petroleum Advisory Committee, whose function is to advise the Army and Navy of petroleum matters.

R. L. Minckler

Mr. Minckler was born in Minneapolis and his first job was that of oil boy with the Great Northern Railway. He served in the Army during the first World War and subsequently attended the University of Washington, majoring in business administration. He then became a purser for a trans-Pacific steamship line and, in 1921, came to Southern California to work for the Southern California Edison Company as a cost accountant.

Joining General Petroleum in 1924, he specialized in various phases of accounting. Ten years later, Mr. Minckler became assistant to the president, and in 1941 was elected a director. He was for several years a director of the Kettleman North Dome Association.

During World War II, Mr. Minckler again served the government, as Director of Petroleum Supply of the Petroleum Administration for War, with headquarters at Washington, D.C. Upon returning to General Petroleum in 1945, he was elected a vice-president of the company.

Frank J. Colton Named President of C.N.G.A.

At the monthly Executive Committee meeting Frank J. Colton, Superintendent of Gas Operation, Tide Water Associated Oil Company, was announced as the President for the year 1947-48. Mr. Colton has been active in the affairs of the California Natural Gasoline Association since 1935, serving on such committees as the Fall Meeting, Technical, Program and as chairman of the Advisory Committee the past year. W. A. Kirk, California Southern Oil Company, was elected Vice-president, and will head the Advisory Committee.

New Directors elected for two years were as follows:

A. H. Bradford, West Coast Refining Company; John G. Braun, Braun Corporation; F. J. Colton, Tide Water Associated Oil Company; Earl Dunn, The Fluor Corporation, Ltd.; R. C. Enderly, Wilmington Gasoline Company; M. L. Fort, Pacific Lighting Corporation;

Frank J. Colton

W. A. Kirk

C. D. Gard, Union Oil Company; R. D. Gibbs, Union Oil Company; R. W. Heath, Signal Oil & Gas Company; J. C. Herron, Shell Oil Company; H. R. Linhoff, Richfield Oil Corporation; S. F. Magor, Superior Oil Company; P. S. Magruder, General Petroleum Corporation; H. W. Parmelee, Del Valle Gasoline Company; W. W. Robinson, Jr., The Texas Company; W.

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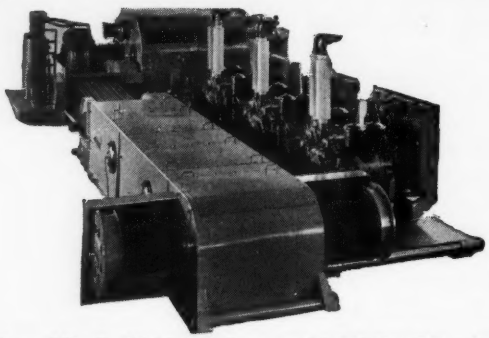
Here are some of today's most modern drilling rigs—and with them today's modern power for drilling machinery—General Motors Diesel engines.

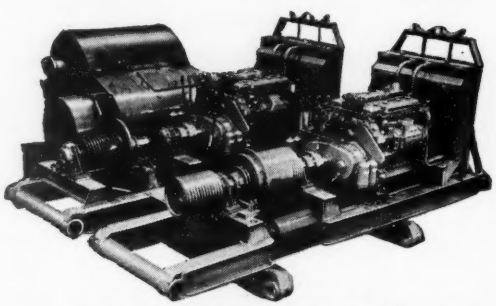
Because GM Diesels are 2-cycle and deliver power at every downstroke, they are lower in weight and sensible in size in relation to their power. They give smooth, steady power and their responsive governors take up a load quickly and easily. Add this to their economy and reliability, and it's easy to understand their wide popularity in the oil fields.

Another feature is the way they can be compounded. Almost any amount of power can be built up. Six-cylinder single engines deliver 138 B. H. P. continuously at 1800 R. P. M. Two "Sixes" are built into the "Twin" producing 276 B. H. P. and four "Sixes" are available in a "Quad" providing 552 continuous B. H. P. at 1800 R. P. M. Further combinations of these GM multiple-engine units provide the highly portable, heavy-duty power demanded by modern drilling operations.

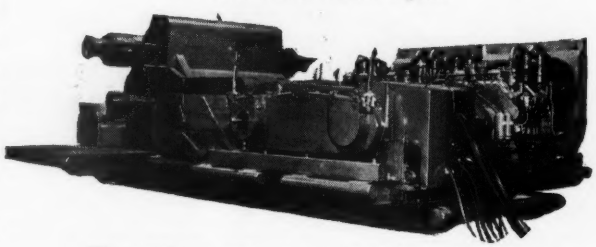
Manufacturers of well-drilling machinery know that this kind of flexibility and economy pays off. That's why more and more wells are being drilled with General Motors Diesel Power.



Turney Mfg. Co. Model 4B drilling rig and 3 GM Twin 6 Diesel engines.



National Supply Company, Model 50 rig powered by 2 GM Twin 6 Diesel engines.



Wilson Mfg. Co. "Giant" rig and 2 GM Twin 6 Diesel engines.

DETROIT DIESEL ENGINE DIVISION

DETROIT 23, MICH. ● { SINGLE ENGINES .. Up to 200 H.P. / MULTIPLE UNITS .. Up to 800 H.P.

GENERAL MOTORS

GM GENERAL MOTORS DIESEL POWER

DIESEL BRAWN WITHOUT THE BULK

GENERAL MOTORS CORPORATION

DIESEL ENGINE SALES, PETROLEUM INDUSTRY, 1504 PHILTOWER BUILDING, TULSA 3, OKLA

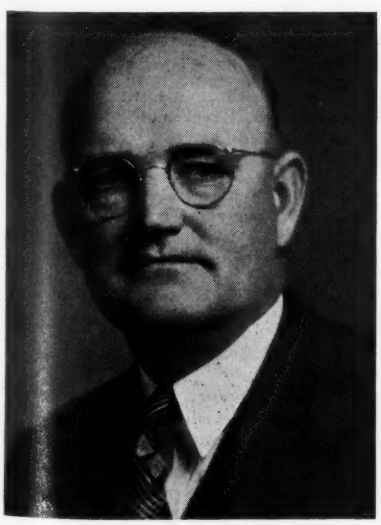
D. Smith, Wilshire Oil Company; R. S. Tulin, Shell Oil Company; E. W. Walker, Western Gulf Oil Company; E. W. Webb, Continental Oil Company.

Emsco Personnel Shifts

Mr. Hugh H. Glen, President of Emsco Derrick and Equipment Company, announces the following executive personnel changes:

E. B. Fowks

Mr. E. B. Fowks, former Export Sales Manager, has been appointed Manager of the Advertising and Sales Promotion Department. Ernie is well known in the oil industry, both in domestic and foreign fields, having been associated with Emsco for 24 years. He is past president of the Los Angeles Chapter of the Nomads. In his new position he will not only head the advertising and sales promotion department, but will also retain jurisdiction over the patent department.



K. F. Forsyth

Mr. K. F. "Ted" Forsyth, Manager of California Sales, has been appointed Export Sales Manager to succeed Mr. Fowks. Ted has had wide and varied experience in the manufacture of oil field equipment having been affiliated with Emsco since 1924. He is a member of the Los Angeles Chapter of the Nomads. In his new position, Ted will have charge of California and all Export Sales.

Loren L. Hillman, Los Angeles oil company head, and Mrs. Hillman, have formally announced the engagement of their daughter, Joan Moffett Hillman, to Dwight William Whiting. The wedding will be in late summer.

Russell Havenstrite, business and pleasure bent, is on a sojourn in Alaska and way points.

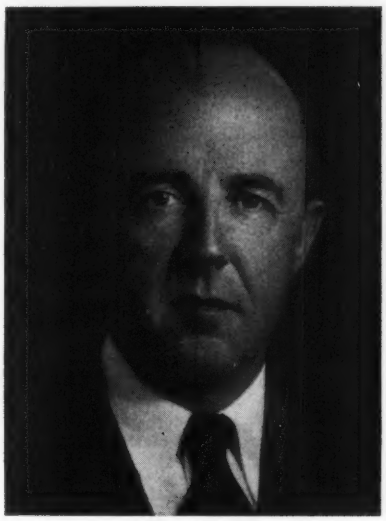
Tyler F. (Bud) Woodward and J. I. Anderson, director of Adams Oil Co. were recent visitors in San Francisco where they studied a laboratory pilot plant which the Interior Department, Bureau of Mines, has in operation. The experimental work is under the direction of H. C. Miller and Ralph V. Higgins. The laboratory work has demonstrated the feasibility of producing crude oil in commercial quantities from the vast deposits of Bituminous sands in the Edna-Arroyo Grande area.

Oscar L. Mills, 62, died at his Huntington Palisade home. He was president of Mercury Oil Tool Co. of Los Angeles, Mills Alloys Co. and the Nevada Scheelite Co. He also was a director of the Southwest Mining Association.

Jack Knight, former member of the Texas Co. geological staff, has joined British-American Oil Producing Co. He will make his headquarters in Los Angeles.

Gordon Z. Greene Forms Own Company

Gordon Z. Greene, well-known to the Natural Gasoline & Refining circles of the Western oil industry, through his activities of more than twenty years, has severed his connections with the Electric Steel Foundry Company to organize his own company.



Gordon Greene

The Gordon Z. Greene Company, located at 2335 East 8th St., Los Angeles, are the exclusive sales representatives for the Commercial Iron Works, manufacturers of a complete line of Orifice Fittings and allied equipment.

The Greene Company also handle the products of several other leading manufacturers.

Credit for successfully completing a fishing job in Superior Oil's world's deepest hole in Caddo County, Okla. is being given to John Cody of Bakersfield, general superintendent for the company, and Laymon Corely, drilling superintendent.

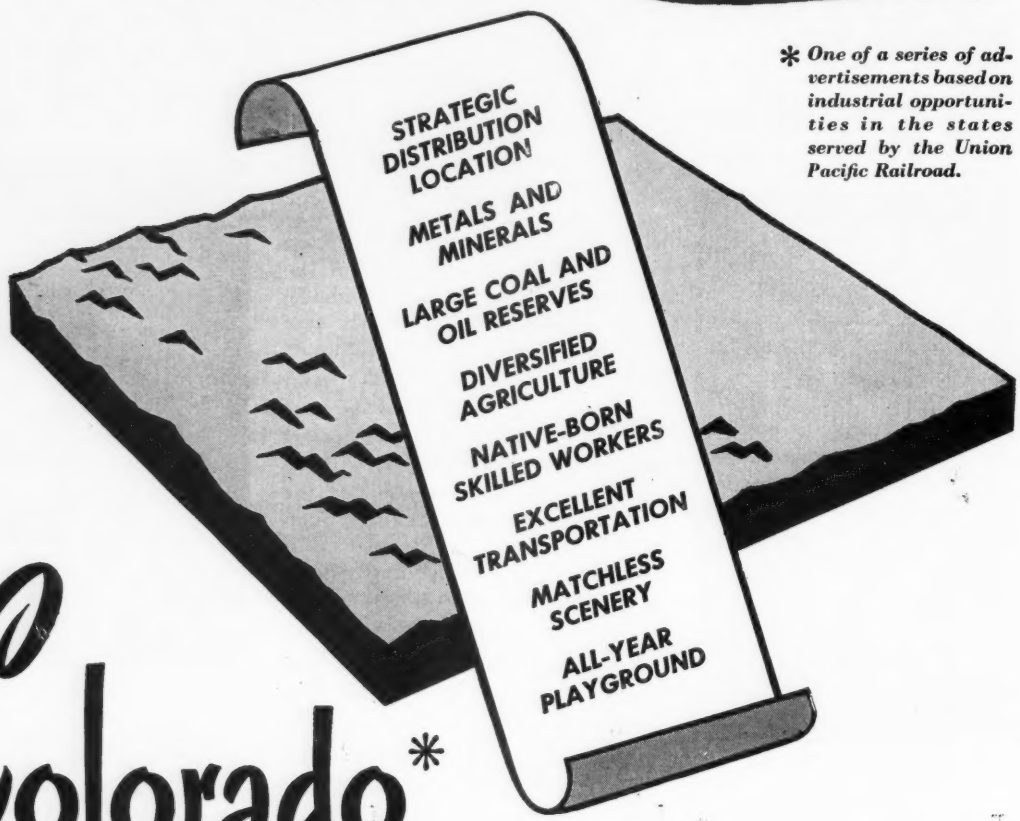
Hugh A. Matier, geologist for the Union Oil Co., told members of the Lions Club meeting at the Los Angeles Biltmore Hotel that it will be at least 20 years before atomic power can be employed in peacetime uses.

"They invented gunpowder," he said. "Later dynamite, a more powerful explosive was invented. But I have yet to see an automobile run by dynamite or gunpowder."

UNION PACIFIC

TREASURE MAP OF INDUSTRY

* *One of a series of advertisements based on industrial opportunities in the states served by the Union Pacific Railroad.*



Colorado*

Colorado offers industry many desirable sites for manufacture, distribution, warehousing, and other purposes. It is strategically located for national distribution.

Diversified agricultural products are of high quality due to favorable climate and soil.

More than 250 useful metallic and non-metallic minerals and compounds have been found, including precious uranium. Timber, oil and coal are practically unlimited.

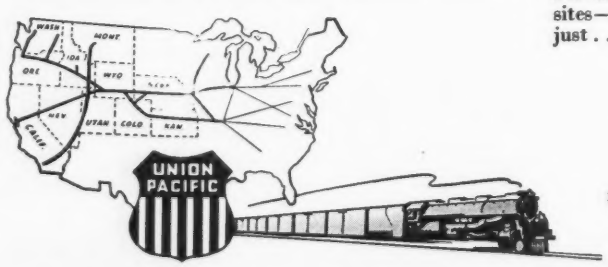
Native-born skilled labor, and a healthful climate resulting in fewer "time-outs" assure economical production.

Colorado provides sound state economy, modern educational and cultural facilities.

Thousands of vacationists enjoy its mountainous splendor, cool summer breezes and winter sports.

Union Pacific provides Colorado with unexcelled freight and passenger transportation. Every night, over night Streamliner service between Denver-Chicago . . . Denver-St. Louis.

For assistance in securing industrial and commercial sites—and for all-weather, dependable rail service, just . . .



be Specific – say "Union Pacific"

* *Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.*

UNION PACIFIC RAILROAD

THE STRATEGIC MIDDLE ROUTE

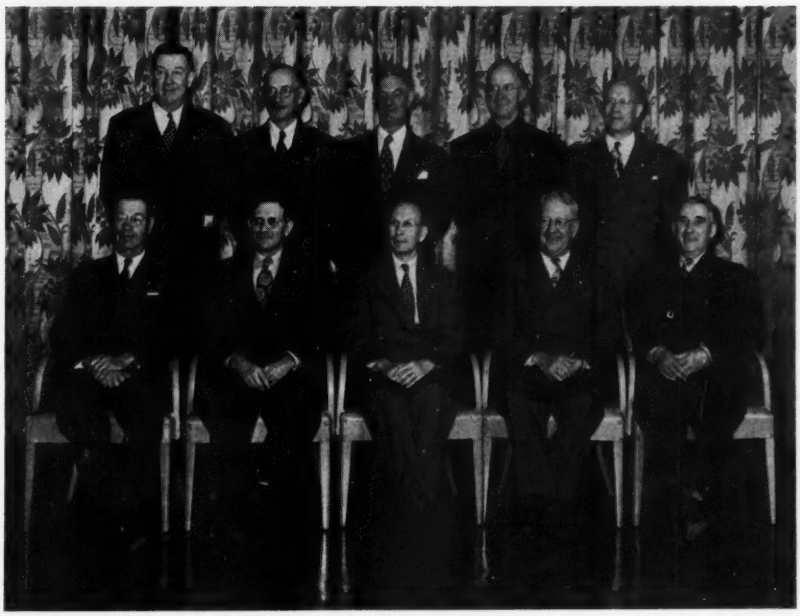
A group of Union Oil old timers and their wives met at the French Cafe in Montebello. The occasion was a farewell dinner honoring four men from the Montebello area who are terminating their company careers. Those honored were Russell C. Brown, A. V. (Vic) Nelson and R. W. (Bob) Supler, all of production, and Walt Engelke, of automotive. More than 60 guests attended.

Mrs. Ernest Bysshe, wife of the Cleveland Oil Co. executive won within a week two national contract bridge tournaments.

With Myer Schliefer as her partner, she finished with an 88-point lead over the runner-up team in the final game of the national mixed pair championship at the Los Angeles Elks Club.

Previously in San Francisco, partnered with Australian Expert Detmar Walther, with Schliefer also in the mixed team of four, Mrs. Bysshe emerged as the first western states woman national champion.

D. D. Feldman, a member of the producing branch of the industry, has returned to his Bel-Air home following an air tour of several months in South America.



Three hundred years of service are represented by these ten men who were awarded General Petroleum Corporation 30-year pins by President S. J. Dickey in a ceremony at the company's home office in Los Angeles.

Standing, left to right, are: W. M. McElroy, Mgr. of Refineries; W. L. Grantham, Plant Supt. Pipeline Dept.; J. H. Middleton, Transportation Dept.; P. C. Brown, Transportation Dept.; F. F. Vaughan, Asst. Mgr. Aviation Sales.

Seated, left to right, are: Harry Leadlay, Pipeline Dept.; H. A. Mason, Asst. to Mgr. Laboratories Dept.; K. E. Sweet, Comptrollers Dept.; E. E. Boudinot, Construction Engineer; T. J. McDermott, Refining Dept.

Fleener Named to Executive Position at White Truck

Wilson D. Patterson, Pacific Coast Regional Manager of The White Motor Company, has just announced the appointment of Lon A. Fleener as his assistant. Fleener will have headquarters at the San Francisco Regional Office.

Lon A. Fleener

Fleener returns to The White Company in this important capacity after a short absence spent in Florida. He first joined The White Motor Company in Cleveland in 1940 where he was Wholesale Sales Manager. In February, 1941 he was made Assistant to the Executive Vice-President. In 1943 Fleener was made Director of Industrial Relations and in the early post-war period was transferred back to his post as Manager of the Wholesale Division in Cleveland. Fleener brings to White's coast organization a wealth of "know how" that comes from having spent his entire business career of more than two decades in the automotive field in many executive sales capacities in various parts of the country.

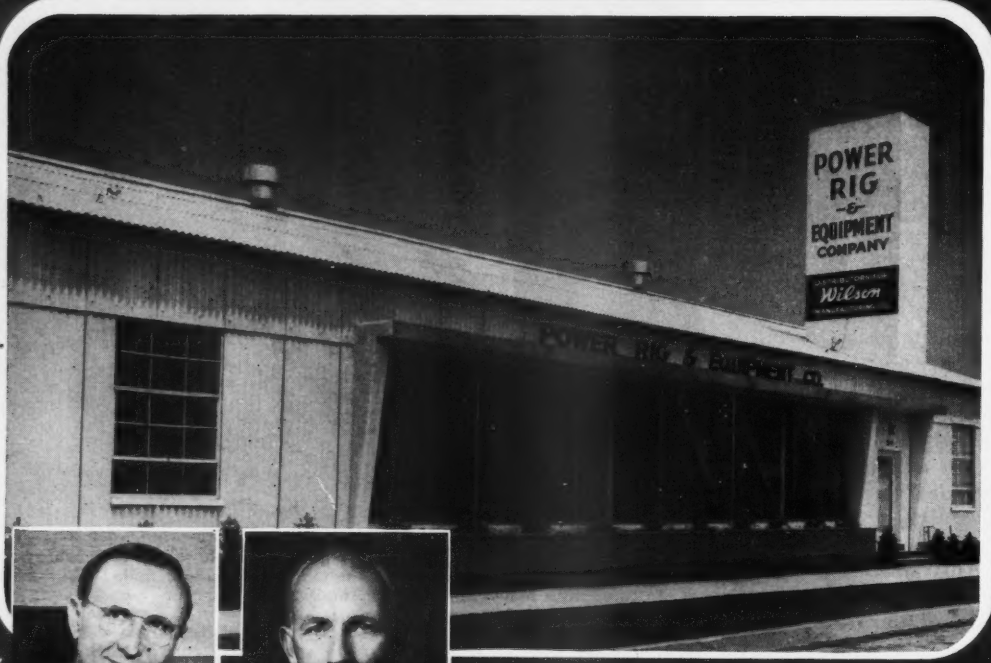
Randels Is Oil Field Sales Chief of B. S. & B.

Sales and operations directions of the Oil Field Division of Black, Sivalls & Bryson, Inc., have been concentrated in Paul Randels formerly with the company at Fort Worth, Texas.

Randels will move his executive headquarters to Kansas City, and will cover the Field extensively, coordinating all Oil Field sales activities in BS&B branches and sales offices.

Paul Randels

MANUFACTURERS • SALES • SERVICE • MANUFACTURERS • SALES • SERVICE • MANUFACTURERS • SALES • SERVICE • MANUFACTURERS • SALES •



E. W. Al Forrow

Milt Lansing

Floyd York

Frank Burns

Abe Harris

Ken Guido

Frank Simmonds

Paul Carpenter

Hello... FROM THE FOLKS AT POWER RIG

All of us are anxious to serve all of our customers, and in our more modern, and larger plant we know that we can. Call us any time and make us prove it! And don't forget to stop by and pay us a visit . . . we'll be glad to see you.

POWER RIG & EQUIPMENT CO., INC.

PRE
SERVICE
SALES
POWER RIG
EQUIPMENT

5141 Anaheim-Telegraph Road • Los Angeles 22, California

FORMERLY THE H & B SALES COMPANY, LTD.

Pacific Coast Representatives for Wilson Rigs & Winches

June Meeting Southern California Section A.I.M.E.

Integration and simplification of overlapping governmental controls on industrial relations with "fewer specific laws" and "more basic principles" for guidance of employers and employees will greatly aid in improving industrial relations, Robert D. Gray, Cal-Tech Industrial Relations Section Director, told members of the Southern California section of the American Institute of Mining and Metallurgical Engineers at the June meeting held at the University Club, Los Angeles, California.

Speaker before the A. I. M. E. group, Professor Gray cited the fact that today industrial relations controls are exercised by numerous federal, state and even local bodies, and that such controls are tending more to confuse than to clarify. Principal federal agencies exercising industrial relations controls include the Labor Department, Justice Department, Treasury Department, Federal Security Agency and Veterans Administration. In California control is vested in the Department of Industrial Relations with its divisions of Labor Law Enforcement, Industrial Welfare Commission and Industrial Accident Commission. The state also has a Department of Employment, over which three federal agencies likewise exercise control. These are the Department of Labor, Federal Security Agency and Veterans Administration.

"All of these laws are subject to continuing changes," Gray said. "The present session of the legislature in California has, or will, change the Workmen's Compensation Laws, the Unemployment Insurance Act and the Labor Code. Congress is continually changing or threatening to change its laws. In addition, a variety of administrative agencies make new interpretations of these laws daily, and these interpretations are, too frequently, changes in the law itself."

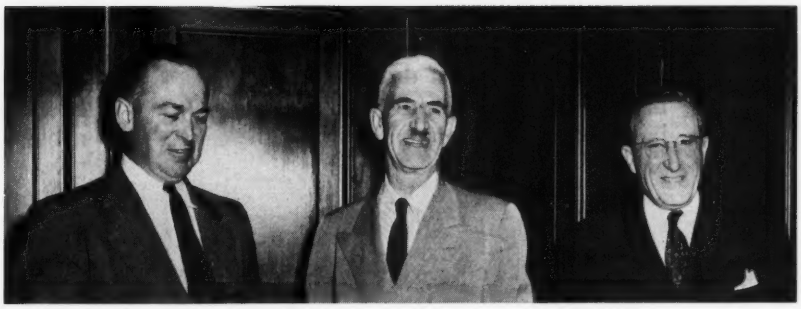
He cited the fact that at the present time many aspects of industrial relations are subject to government control, such as safety and accident prevention and workmen's compensation, collective bargaining, social security, wages and hours, training and apprenticeship, veterans, employment of women and minors, and controls of special industries such as railroads and airlines.

"It is apparent that at the present time we have too many specific laws and too few basic principles. It is apparent that as a result of many of these laws the minimum standards prescribed by law become the maximum standards. In other words, the floor becomes the ceiling. It should be apparent that we cannot legislate manners and morals. Government controls, therefore, should be integrated, simplified and reduced to the basic principles. Such laws should be confined to minimum standards.

"Good industrial relations are of equal importance to employers, employees and the public. Such relationships, however, cannot be created by law. They can, however, be built on sound basic principles that recognize their dependence on mutual understanding and confidence between employers and employees. The day-to-day dealings of any foreman or supervisor with his employees and also with his superiors determine the type of industrial relations in the company."

After the serious discussion on Industrial Relations the engineers relaxed to a series of colored pictures presented by E. D. Arthur, Mining Commissioner of the Los Angeles

(Continued on Page 56)



Professor Robert Gray, Speaker; Stewart Ingram, Program Chairman; E. D. Arthur showed colored pictures of Nevada Mines and Camps.

Left to right: Harold J. Clark; R. C. Madden, G. B. Means, and E. R. Babylon, Iron and Steel Division.

Fred Ninnis, Tonopah, Nevada; T. A. Atkinson, Chairman of Section; T. H. Devore, Los Angeles.

Dear Homer–Am down at the beach, swimming and having a barrel of fun. *Elmer*

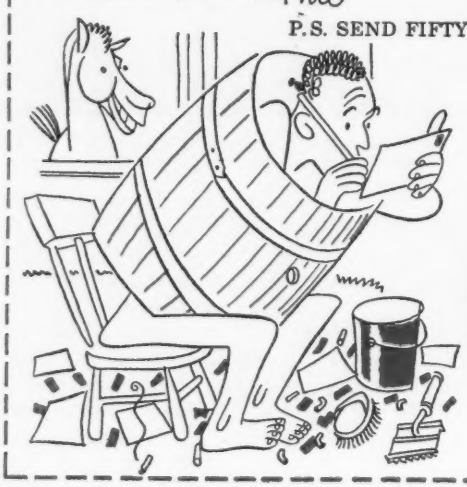
Dear Homer–The mountain scenery is beautiful. Am having a barrel of fun. *Joe*

POST CARD

Vacation Time or Having a Barrel of Fun

Dear Meathead–Am enjoying the summer racing season. Having a barrel of fun. *Phil*

P.S. SEND FIFTY BUCKS.



Gents–Am knocking over tough emulsion problems with greatest of ease. Am using Tret-O-lite. Having a barrel of fun. *Homer*

Dehydrating reagents from the big red barrels are at work in oil fields everywhere... for the best in dehydration get Tret-O-lite.

TRETOLITE COMPANY

Manufacturing Chemists

Los Angeles 22, California St. Louis 19, Missouri

DEHYDRATING DESALTING

TR 47-1

Kern County OIL NEWS

JUNE AS PREDICTED was cooler before it turned hot. Perhaps all oilwigs agree that June is that way every year. Like Kern Taxes the weather is being talked about as invitations go forth to the public hearings on the budget. But unlike weather the taxperts are doing something about it.

"DITTO" MIGHT BE the lead line under May's captions as regards the MER'S, breaking drilling records for new wells, new depths and new oil. Likewise the demand is new.

RUSSIA took on one of the biggest loads of crude this month at San Pedro ("LA" Harbor) according to some Kernoilwigs who were deepsea fishing off the break waters. Another cargo vessel took on steel. We need oil and steel both, but you know we just hate to take any shingles off the roof. We remember when scrapiron was a popular commodity to the Orient until reserves here and stockpiles there were out of joint.

IF STEEL WERE AVAILABLE and more pipe could be manufactured it is difficult to say just where Kern would stop pouring into pipelines to the seaboard. Despite conservation practicing, some gentlemen are exceeding their manners as regards over-production. These "agreementeers" are not ready to play ball.

PEACE POWER IS AIR POWER" campaigns were underway in Kern last fortnight when top army, navy and air brass in a symposium with aircraft makers, mainline operators and the American Legion National Aviation committees. Conducting were the chambers of commerce in a "protection promotion" dialogue that made sense.

KERN COUNTY EARNED the right to have one of the four national meetings on Air Power Peace Power, because of her tremendous aviation program as an outstanding contribution during the war. In Kern as in many other U.S. Counties talk of preparedness means peace, and talk of peace is war.

ONE DAY THIS MONTH at Taft the "CNGA" had met in chapter style. But added to the program were election features and extra attractions. Gordon Wells Petroleum Engineer of Independent Exploration Company, for one, had a splendid discourse on the "Discovery and Development of the Salt Creek and Carneros Pools."

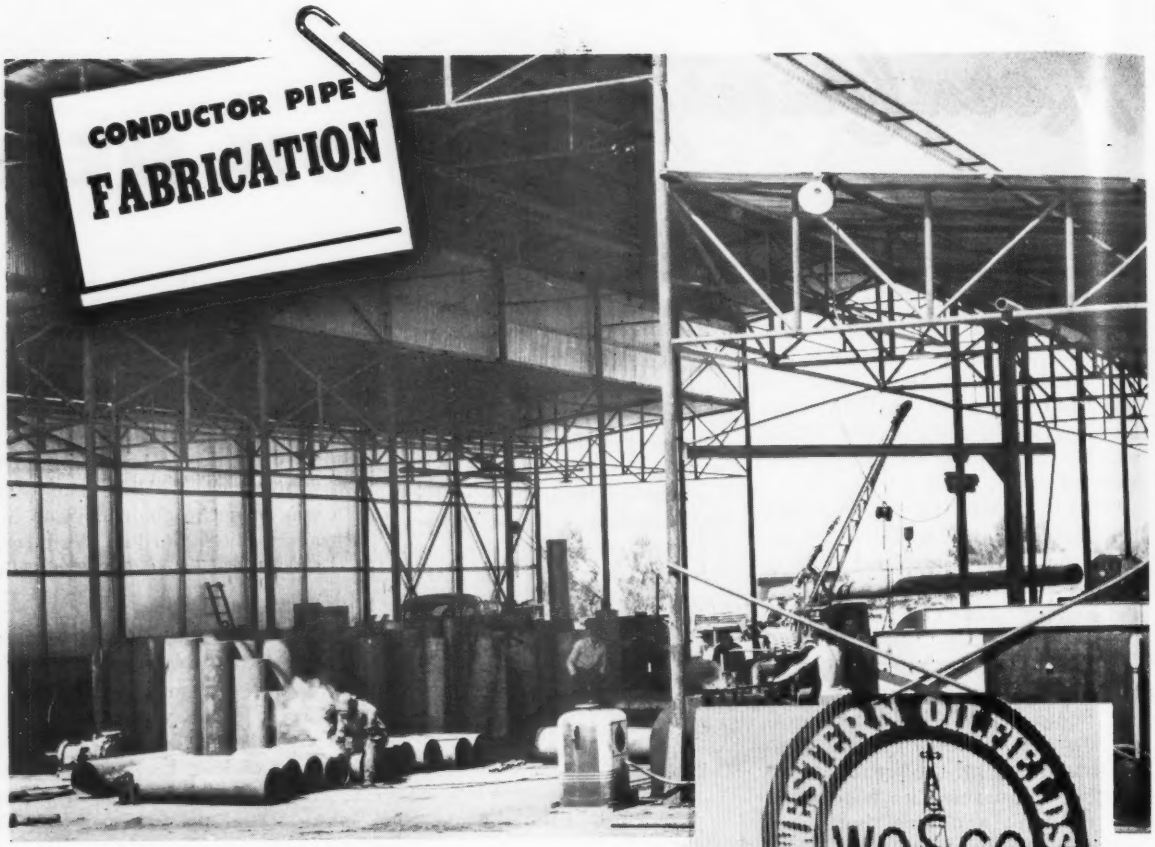
HARMAN PEAHL who has been secretary of CNGA was made chairman by unanimous action. Harman has been with SO CAL GAS for many years. ROSS FURLONG with Texaco was elected secretary.

"RECENT TRENDS IN THE DESIGN OF GAS AND MOTOR DRIVEN COMPRESSORS" was the title of another talk given at CNGA on June 12 at the SOCO 1-c Clubhouse. Phil W. Mettling, of Cooper-Bessemer Company did the shoptalk and he is always welcomed back for such information on the subject. R. N. Donaldson of SOCO was program chairman and in some abstraction Gordon Wells gave us an outline of his own presentation.

SALT CREEK CARNEROS pool is located as most our readers know, Southwest of the South Belridge Field and Northwest of the McKittrick Cymric area. Its discovery on March 13, 1946, by Independent Exploration Company "Temblor No. 2" was firmed up by an initial production of 4800 B/D

PHOTO TAKEN AT RECENT VISIT TO BAKERSFIELD OF THE SAN FRANCISCO STOCK EXCHANGE MEMBERS.

Dinner Table: left to right: Richard P. Gross, Stone & Youngberg, S. F.; Virgil D. Baker, Pres. of Independent Exploratior Co., L. A.; George N. Keyston, Keyston & Co., S. F.; R. E. Kaehler, Pres. S. F. Stock Exchange; A. B. (Tex) Newby, KC Manager So. Cal. Gas; Dir. KC C of C, Taft; Fred M. Keller, Oceanic Oil Company; Earl T. Parrish, Chairman Board Governors, Earl T. Parrish Co., E. G. Hoffman.

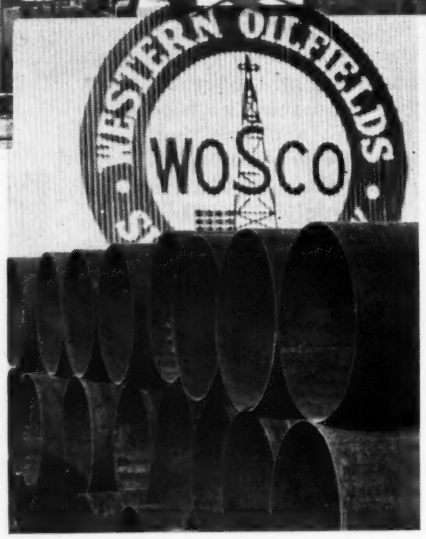


WOSCO DOES IT!

CONDUCTOR PIPE FABRICATION in Western Oilfields Supply Company shops combines the operation of the very best shop and welding equipment, skilled workmanship by experienced experts, and the use of materials of only the highest possible quality. These factors have made Wosco **the** headquarters for conductor pipe for California Oilfields.

WOSCO: **Supplies** pipe for every oilfield need
Repairs and reconditions used pipe
Fabricates oilfield conductor pipe
Rents and installs rental pipelines and pumps

Whatever your pipe needs . . . WOSCO DOES IT!



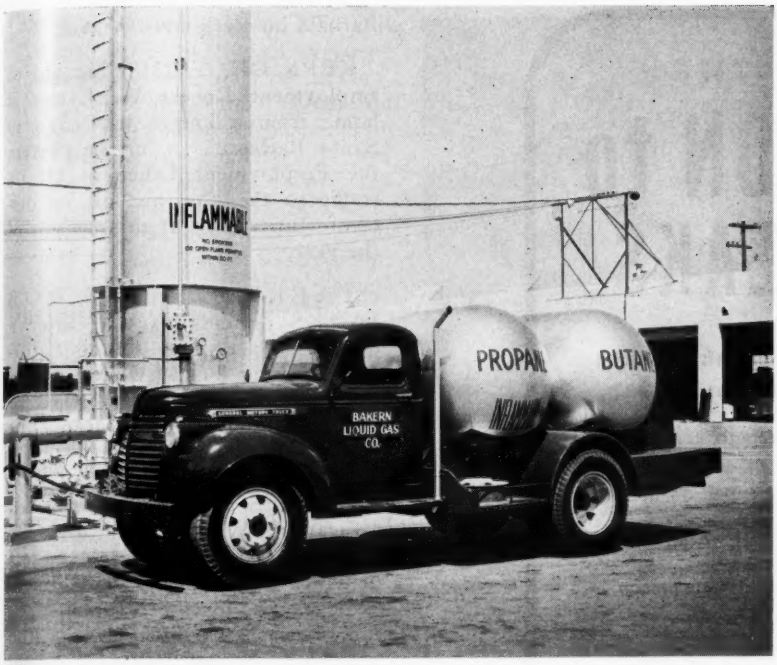
Conductor Pipe of every diameter is immediately available at all times. All common diameters are stocked—special orders are made up to your specifications without delay. Save time and money by just calling Wosco!

PIPE MERCHANTS

HIGHWAY 99 AT PIERCE ROAD • BAKERSFIELD, CALIFORNIA

Phone 6-6724

WESTERN OILFIELDS SUPPLY CO.



"BAKERN MEANS Bakersfield Kern County "propane-butane" service and supply. Gussie Spears from the GRAPEVINE is the motivating and all inspiring force that turns margins into profits. Recently she has been "threatening" to advertise that Kern is a good place in which to live and purchase butane.

flowing 18 degree gravity oil . . . in location Section 17, T29S, R21E, according to Gordon H. Wells, Independent's well known Petroleum Engineer.

GORDON was good enough to tell us that the present status runs something like this: producing operators, Standard, Texas, Superior, Richfield, Miller & York, Independent Exploration and Union Oil.

WELLS told us that 52 producing wells further identified the area as an economic unit developed from 230 acres at a depth range of 2,200 to 3,000 feet. Gravity runs from 17 to 22 degrees from a present production rate at 6500 B/D for the field. All flowing wells are curtailed to 132 B/D.

WELL, WELLS SAYS, THE WELLS have a varying oilsand thickness of from 220 to 49 feet, and he concluded by saying substantially, as follows: "All pool limits have been established except to the Southeast where Texas Company continues to prospect ahead. This pool establishes the Carneros sand as a prolific producer and adds a substantial amount of oil to California reserves."

KERN COUNTY OIL NEWS is indeed grateful for this information from Gordon Wells and adds that it is no wonder that San Francisco's Stock Exchange rekindled its interest as a result of a trip this last month to the area. Jack Beach lead the junket as geologist scout for Independent.

M. K. B. OIL TOOL SHOP is publishing its fictitious name and we were interested to know that MKB means Bernard J. McHale, Sam Kelly, and Frank H. Beatty. Place of business is on PIERCE ROAD "contractors row."

GEORGE VON KLEINSMID is also in printer's ink of the Daily Report in its department of Certificate of D/B under FN. Under the style of doing business as Kleinsmid Construction Company . . . however, the typesetter has it Klein Smid . . . so salute George just the same.

KERN'S BRIEF SEVERE summer has begun its processes to sugar the grapes, fiber the cotton, ripen the plums and hurry the end of the spud's swift harvest. Life in Kern is not without many compensations. Seven thousand folks enjoy the shuttle between harvests and planting seasons, and the oilwigwags themselves despite "providence-sent" air conditioning, go to Santa

McDonald
EXPLOSIMETER

A compact, portable combustible gas indicator ruggedly built for continuous dependable service. Small, light, easy to use. No special training required—shows gas concentrations below, within, or above explosive limits.

McDonald
H_2S
DETECTOR

Measures presence of hydrogen sulphide gas in amounts ranging from .0025% to .04%. Any gas present discolors the chemical in the detector to a dark gray—length of discoloration shows degree of concentration. Detector tubes may be marked and kept for several years. Light, convenient to carry, simple to operate.

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
Safety FROM HEAD TO FOOT
5100-P SOUTH HOOVER STREET
LOS ANGELES 37, CALIFORNIA
Other Offices in San Francisco and Houston

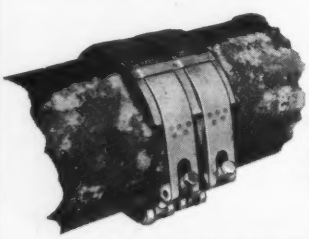
HERE'S THE

SOLUTION to PIPE LEAKS

New Marman Pipe Leak Clamps give you these features:

- √ Stainless steel for high strength, corrosion resistance, permanent repairs.
- √ Hycar pad resistant to deterioration by hot or cold water, gas, oil, etc.
- √ Can be used and re-used — outlast pipe.
- √ Easily and quickly installed by one person.
- √ Form naturally to pipe contour.
- √ Patch plate can be positioned for most advantageous installation.

HIGH PRESSURE TYPES

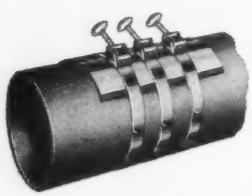


1100 P.S.I. Maximum

3 types for all pipe from 2 to 8 inches.

Largest size weighs only 6 pounds.

LOW PRESSURE TYPE

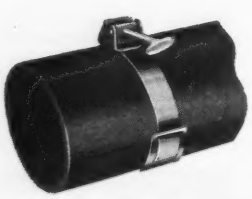


6 sizes fit all pipe from 1/2" to 12".

Adjustable to different pipe sizes.

Can be cut down to provide desired size or shape.

PATCHMASTER (all purpose)



800-1100 P.S.I. Maximum

4 sizes fit all pipe from 1/2" to 4".

Especially adaptable to pin-hole leaks.

For information write:

MARMAN PRODUCTS CO. INC.

940 W. REDONDO BOULEVARD
INGLEWOOD, CALIFORNIA

Barbara on week-ends.

KERN OIL FIRM'S big add to employment Robert W. Evans is home from a longer trip than to Santa Barbara . . . but he prefers the Employment Office in all its traffic to the East and all its discomfortures even at this season of the year.

TALKING ABOUT BOB EVANS reminds us that after a quarter of a century selling Saturday Evening Posts, working in a bank, a water company, steward for the Sciots and selling insurance, he finally had the employment problem half solved after a ten year tension at the USES, and thought he needed a vacation. Well, the California Association of Employment Managers of which he is "prexy" sent him to "Noo Yawk" for the National Confab. It was a fifty fifty deal . . . Bob furnished the car, (a new second size Studebaker equipped with sightseeing lookouts) the gas and knowhow . . . the association furnished the "talkshop" and blessing. Three days out Bob forgot about the new car and its feel. He thought it still had fenders . . . so he stepped hard on the ground and went out for the count . . . ended up with a fractured hip and returned a month later with a cane. He is going to recover but painfully so. We might add that it was still fifty fifty, the association furnished him the cane and he furnished it a broken hip.

CHARLEY MANLEY who went on a trip last month in COW has just returned. Down at Oilfields Construction Company we learned that a stop at New Orleans for a boat to Cuba resulted in a flight from Havana to Miami and a stay-over in West Palm Beach. Next thing we knew he was in DC, NYC, Banf, Vancouver and La Cresta before we could catch up with his postcarding of details. One thing he did do . . . took a lot of 35mm color stills . . . if some of that Southern Sun was an accolade to his subjects they ought to be good. Incidentally, Oilfields Construction carried right on and never closed its doors . . . in fact, sales increased during his long absence according to the office clinic because no one had time to wait for Charley's return to argue about jobs or prices.

THIS REMINDS US that OWEN JOHNSON was supposed to have an open South Door celebration of his Valve Shop out there on Chester Avenue North across from the Chamber of Commerce. As soon as the Valve "Vigdig" event takes place we shall flash it, splash it, and crash it for news . . . . .

JIM MILLEN went to Blythe for Texas Company to division manage the Blythe to Los Angeles "big gas inch" from the great southwest country of Texas.

AND ACCORDING TO TEX NEWBY of So. Cal. Gas, M. M. McMahan, who was once on the firing line for the Kern County rural house numbering committee back in prewar days, is taking over the Division Superintendent Operations of Newby's firm. Tex is the General Division Manager for Kern County.

CERTAINLY THAT REMINDS US of the 17 days, and 7,000 mile-trip that Tex took with the two special trains of the Shrine (Al Malaikah Temple) to Montreal, New York, with New Orleans as operation destination. Frank Goldman was the other oilwig that went along with the famous trip.

SAN JOAQUIN VALLEY SCOUTS with barbecue in "Shell Park" turned out to be as we can see: BOB AYERS of Western Gulf; BARNEY BARNARD the Oil Empire; TOM BIBB of Texaco; DAVE SCOTT OF Texaco; STAN CONRAD of Richfield; with Sam Fleishman too; and Ken Krammes of Texaco; and finally but not the least, Lee Wix of Western Gulf and Bob Clark of the same terrain.

WHAT'S BECOME OF COLUMN: "Charles Griffin a successful oil driller of Los Angeles who used to look over the fields here when folks were selling oil stocks galore in the prospective Mountain Oil areas which never existed"—as the Valley did.

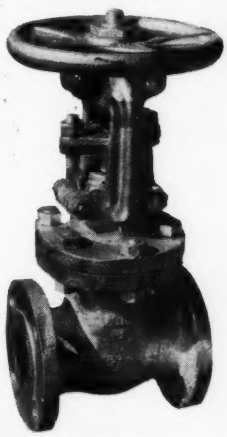
TEHACHAPI NEWS . . . (it will always be "TEHACHAPI TOMAHAWK" to us) reports that one day this month a steam shovel excavating for another foundation for a potato packing shed uncovered the old corporate seal of the American Oil Company Incorporated, October 13, 1900. Deep in the heart of Tehachapi's good earth . . . no one knows why. Then the old files of the then

STELLITING

IS A SPECIALTY AT

JOHNSON

VALVE SHOP



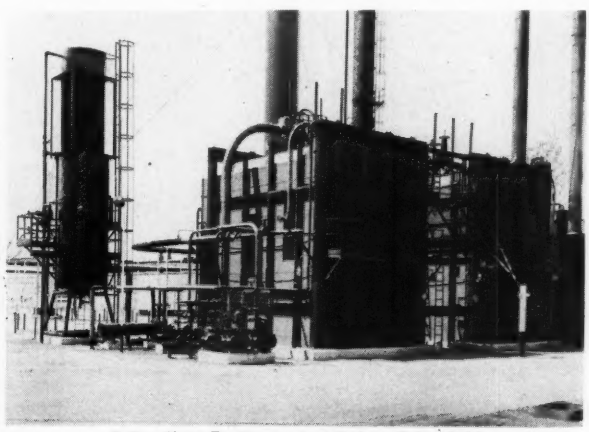
Expert workmanship and complete modern equipment for stelliting plug valves.

Years of experience in the repair and sale of all types of oil well and refinery valves make it possible for Johnson to say . . .

"ALL WORK GUARANTEED"

Johnson VALVE SHOP

BAKERSFIELD PHONE 2-5266



Boiler Plant Equipment installed at Bakersfield

BOILER PLANT and

Compressor Plant Construction

Completely automatic Oil Heating Plants

Johns Manville Insulation

Brick Work ★ Concrete Work

C. E. MANLEY, Manager

OIL FIELD CONSTRUCTION CO.

of BAKERSFIELD

Highway 99 West of Circle Phone 3-0750

Meet Another of the Complete Line of

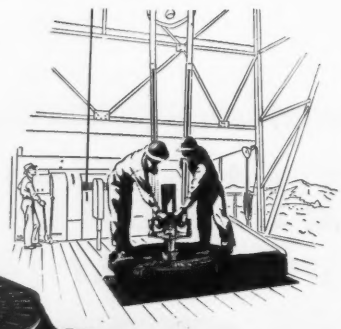
IDEAL Rotary Machines

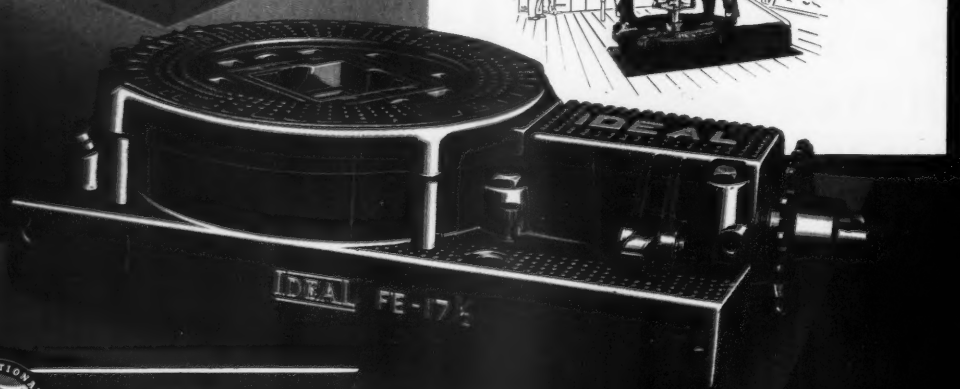
THE TYPE FE-17½

- HEAVY DUTY BALL TYPE MAIN BEARING
- SPIRAL BEVEL GEARS WITH HARDENED TEETH
- UNITIZED PINION SHAFT ASSEMBLY
- AUTOMATICALLY INDUCED OIL LUBRICATION FOR MAIN BEARINGS AND GEARS
- PRESSURE GREASE LUBRICATION FOR PINION SHAFT
- SEALED AGAINST INTRUSION OF MUD AND FOREIGN MATTER
- PINION SHAFT LOCK WITH CONVENIENT OPERATING GRIPS
- NON-SKID SAFETY TOP

The IDEAL FE-17½—53¼ Rotary Machine is a modern oil bath spiral gear rotary for shallow to medium depth drilling. It has API 53¼" spacing from center of hole to sprocket. The FE-17½ is also made with 44" spacing known as FE-17¼—44.

The FE-17½ Rotaries have a gear ratio of 3.33 to 1 providing a recommended maximum speed of 200 RPM. Over a period of several years the FE-17½ has been a very popular machine and has an excellent service record due to the features of design listed at left.

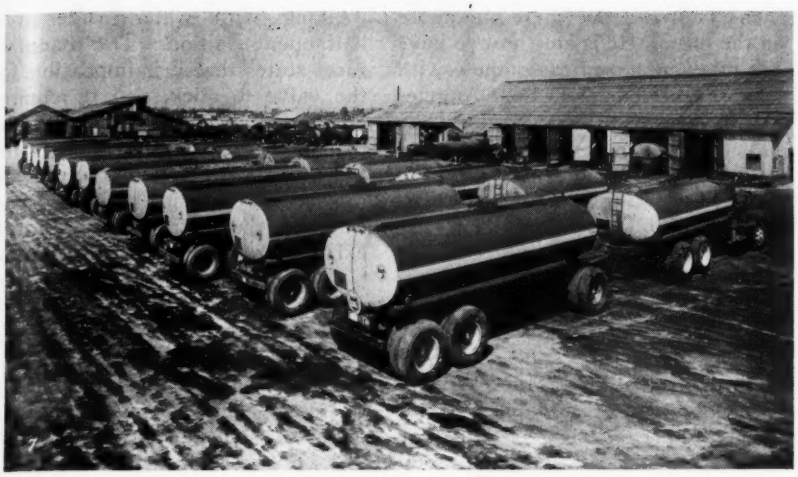




NATIONAL BLUE PRODUCTS

THE NATIONAL SUPPLY COMPANY

GENERAL SALES OFFICES: TOLEDO, OHIO · DIVISION OFFICES: CASPER · FORT WORTH
PITTSBURGH · TULSA · TORRANCE · EXPORT: NATIONAL SUPPLY EXPORT CORPORATION,
30 ROCKEFELLER PLAZA, NEW YORK, N.Y., U.S.A. · RIVER PLATE HOUSE, 12 SOUTH PLACE, LONDON, E.C.2.



OILFIELDS TRUCKING COMPANY'S tanks are loaded for Nevada and other points "NEWS" as Interstate Commerce Commission approved 3¢ reduction to meet same rate from Los Angeles or San Francisco to sister state Nevada. So with equalization and with 53 miles closer range from Kern to Nevada, "OFTCO" should be proud of its achievement through real sacrifice and hard work.

"TEHACHAPI TOMAHAWK" revealed news about oil . . . it predicted oil prosperity for Kern in that year 1900. Said an old timer, "most exciting hidden instruments surpass the significance of the **"seal"** . . . the stock shares . . . and somewhere in Tehachapi's attics there might be enough oil stock certificates to "stock up" for a fine wall paper job.

THE SEAL was in good condition and still able to make its impression, at least, on Kern Oil Historians. But the old walls along the railroad are fast yielding to agriculture encroachment and historic value is reaching low.

SPEAKING OR TALKING OF PICTURES the fans of Petroleum Production Pioneers have sought this department for many pics subsequent to the Kern River Country Club Bar-B-Q. Even the press has made overtures. Like the old fashioned piano player at the bowery, we shall do our darndest . . . to supply them. All inquiries refer to "COW" second May issue and pages 44, 45.

BETTE JO JONES was Kern County Queen for a day . . . from Taft's big West-side population the oil industry's cultural phase produced a winner in pulchritude. However, when so many judges jointly agreed on Bette's beauty her future husband took no chances from the tens of thousands of gazing eyes, proposed to "ALTER" their plans. In due time before the eve of Santa Cruz "convention of the queens," Miss Bette abdicated in favor of the runner up "Miss Shafter." Although agriculturally known the Shafter area is assessed at nearly 50 millions of dollars . . .so oil has won again in Kern.

YOU PROBABLY THOUGHT Kern County bank assets which include demand and time deposits . . . loans and banking house, would equal about a hundred million dollars. Well, you were wrong. One bank alone might have almost that much. Best guess is that when four other banking firms are added the total will reach for an 8th of a Billion Dollars.

THIS REMINDS US AGAIN THAT in the San Joaquin Valley we have a Billion Dollars spent yearly by a million people who live here.

FIFTY YEARS AGO according to the "Californian" Buena Vista Lake was falling at the rate of a foot a fortnight and old man Kern River was decreasing in second feet discharge from Mt. Whitney runoff. At the same time, Bakersfield city dads canned slot machines and no sign of games of chance were even in sight. And thirty years ago despite a plea by Cooks & Waites Union all saloons were closed at 11:30 p.m. But 20 years ago the Shell Oil contracted to buy 14,600,000 barrels of crude oil from Taft's Honolulu Consolidated in the Buena Vista area.

DWIGHT BOVEY of WoSco has returned from the East but before we were able to add up his 8,000 miles he struck off on another

Johnston Stainless Welding Rods

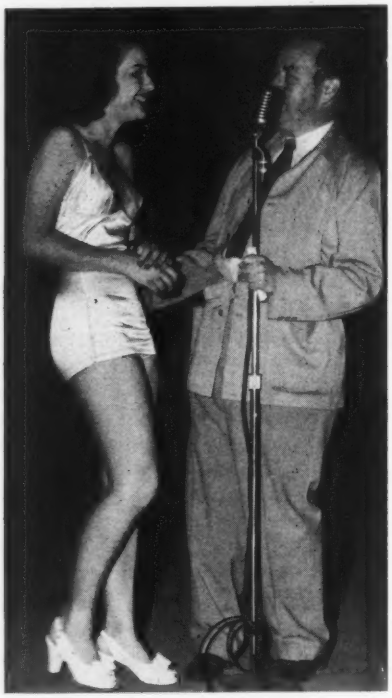
PROVEN QUALITY SINCE 1931

•

A. P. JOHNSTON

1845 E. 57th St. - Los Angeles 11, Calif.

chase to the Southwest territory in the big inch gas line areas. We finally got him to stand still long enough to relate upon a portion of his itinerary.



OIL WINS AGAIN: From Taft this month comes news again that it could easily have won with OIL QUEEN Bette Jo Jones before the beauty cruise at Santa Cruz. Here we see Bette as Miss Taft and later without question "Miss Kern County" being congratulated by William Vernon McLeod, the Manager of Taft Chamber of Commerce who was selected by the county officials as INTERLOCUTOR for the gala event of "queen versus queen."

SELLING PIPE was Bovey's most recent reason for the last junket. The first time he purchased it. Some of the A. O. Smith's pipe he saw made in Milwaukee was later identified in part of the pipeline in Texas.

WESTERN OILFIELDS SUPPLY COMPANY is now selling pipe in six Western states according to Bovey who is sales Chief for Charlie Lake, Western's (WoSco) headman.

OILFIELDS TRUCKING COMPANY's Harry E. Phoenix reports that he is still pioneering after a quarter of a century of effort along that line. No single individual has done more to get Kern oil products to new markets than Harry. Recently his haul to Nevada has improved by state highway developments at Tehachapi and elsewhere plus more in the offing. He is able now to have his rates equalized to compete with San Francisco and Los Angeles truck lines. All Harry wants is the equal rate . . . no price cutting operator is he. . . By the way we think there is a saving of about 53 miles. Our hats off to Harry Phoenix and his co-partners in "Oilfields Trucking."

ANOTHER PIONEER WITH VISION is Dick Stricklen who by the way had his super collossal grand opening of the World's Largest and Most Complete Motor Truck Super Service Station. The whole scheme has not only efficiency in truck line operations but has made a contribution to safety and comfort for tired trucks and their drivers.

Medearis Appointed Distributor by Tanner

The C. L. Tanner Company, 1007 Santa Fe Avenue, Los Angeles, announces appointment of Medearis Oilwell Supply Company as exclusive oil field distributors for the Tanner High Pressure Plug Valve.

These valves are of particular interest to users of valves for drilling mud and oilwell cementing service, because they can be thoroughly cleaned without disassembling by washing with water while in a half open position. The manufacturer states that it is impossible for the valve to stick, and it requires no lubrication or field maintenance. One of the principal features of the valve is that it is constructed with replaceable corrosion-resistant seats, enabling the distributor to furnish exchange valves at their field stores.

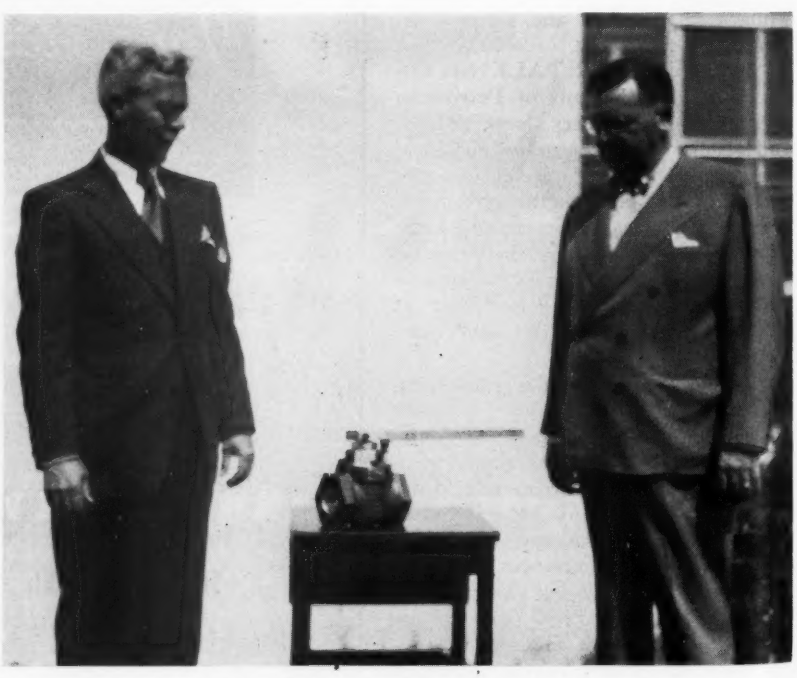
Complete stocks of these valves will be available at Medearis Oilwell Supply Company field stores.

E. M. Bedford, Western Gulf Oil Co. arranged a fitting climax to Scouts' season activities, by sponsoring a sightseeing trip for 80 Boy and Girl Scouts.

Chairman of Cub Scout Pack 8, Bedford said it was the first time many of the youngsters had been on a train. The Girl Scouts who were on the tour belong to Troop 138.

Edwin W. Pauley, president of Petrol Corp. and California Democratic National Committeeman and his family are en route to Hawaii and Coconut Island, purchased last year by Pauley and a group of associates. They sailed from Los Angeles on the liner Matsonia.

The family will spend the summer on the Island, Pauley plans to return in two or three weeks.



C. L. Tanner and Paul A. Medearis

Play to "break par" *on any hole!*

The player who "breaks par" on a golf course, with the allotted number of strokes a hole, is at the top of his form . . . He must have skill, good judgment, practice, coordination, to put up that kind of a showing . . . In deep well oil pumping, users of *Axelson Sucker Rods* find that they make a high score, in this operation, and jot it down in the profit and loss account . . . *Axelson Sucker Rods* are *right* in materials, heat treating, uniformity and pin-end design and workmanship . . . Axelson engineered holes produce on recommendations that reduce the risk of down-time, through rod failure, to a minimum . . . Plan to "break par" on your oilfield course, with Axelson rods.

AXELSON MANUFACTURING COMPANY PLANTS—6160 So. Boyle Avenue (P. O. Box 98, Vernon Station), Los Angeles 11, Calif. • 3844 Walsh Street, St. Louis 16, Missouri • OFFICES—50 Church Street, New York City 7 • National Bank of Tulsa Building, Tulsa 1, Okla. • Avda Pte. R. Saenz Pena 832, Buenos Aires, Argentina • DISTRIBUTORS—Jones & Laughlin Supply Company • Great Northern Tool & Supply Company • C. C. McDermond, Apartado 331, Maracaibo, Venezuela • Industrial Agencies, Ltd., San Fernando, Trinidad, B.W.I.

AXELSON

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

DEEP WELL PLUNGER PUMPS AND SUCKER RODS

Field Development

PREPARED FROM CALIFORNIA OIL WORLD NEWS SERVICE

Los Angeles Basin

Riverside Test Works

Near Temecula in Riverside County, Palomar Petroleum Co. is preparing to run 7-in. casing to approximately 2600 ft. in Tyrell No. 1 in Sec. 13-8s-1w. Drilled to 2720 ft., trials at 1620 and 1900 ft. were not deemed conclusive.

Inglewood Try Drills

Basin Oil Co., City of Inglewood No. 1 in Sec. 28-2s-14w in the Inglewood area is drilling on down at 9706 ft.

Alondra Test Sticks Pipe

British-American Oil Prod. Co. is washing over at 3600 ft. in Park Comm. No. 1 in Sec. 22-3s-14w in the Alondra area, after drill pipe stuck at 8375 ft. and backing off to 4470 ft. H. C. Christie, meanwhile, is drilling at 6716 ft. with Johnson No. 1 in Sec. 22-3s-14w. Thomas Connell has staked location for McKinley-Wetzel No. 1 in the section. Drill site falls near Compton Blvd. and Lemoli Ave.

Irvine Ranch Test in Offing

Signal Petroleum of California is planning a deep test well on the Irvine Ranch in Orange County. It will be known as Signal-Irvine No. 1 and it will drill in Sec. 23-10s-6w, three miles east of the West Newport field and west of upper Balboa Bay.

GOODALL ROTARY HOSE
with BARNEY COUPLING
BEST FOR DRILLING regardless of formations, depth or pump pressures; Goodall "Long Life" Rotary Hose is constructed of finest rubber and heavy duck plies reinforced with high tensile steel wire. It's a rugged, abrasive resistant hose that resists outward pressure and elongation.
BARNEY COUPLING—An integral part of the Goodall Rotary Hose eliminates clamps, stems, and metal from bore of hose, thereby removing cause of most rotary hose failures. Do away with high pressure leaks; order Goodall Rotary Hose with Barney Coupling
OTHER GOODALL PRODUCTS
All Types Industrial Rubber Goods plus Steam, Suction, Fuel, Discharge, Cement and Flue Cleaner Hoses.
GOODALL RUBBER CO.
LOS ANGELES • SEATTLE
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"Right Away!"
BOWEN
with the Right Fishing Tools
When you run into a fishing job, you need dependable service in a hurry. Bowen's 6 California service shops are strategically located to deliver the equipment you need immediately. And . . . each of these six service stores, open day and night, carries a complete stock of famous Bowen fishing tools, with expert operators and plenty of rolling stock to get them to you.
Remember — you can count on Bowen's quarter century of fishing tool experience when and where you need it.
24 hour SERVICE STORES
Santa Fe Springs . . Whittier 436-36
Huntington Beach 206
Ventura 6435
Bakersfield 302H8
Avenal 256
Santa Maria 710R
BOWEN FISHING TOOL COMPANY

Here it is!

THE WALDRIP "321"—The only self-propelled servicing and drilling rig that drives into the location NOSE FIRST.

OUTSTANDING FEATURES

● Faster spotting at well location. ● Better balance with less weight. ● Less load over front wheels. ● Clear operating vision. ● Easily accessible motor in rear. ● Unit completely guarded by smooth, streamlined contour guards. ● Furnished with gas, gasoline, butane or Diesel engine. ● Furnished with torque converter or gear box. ●Equipped with 65', 60,000# or 90,000# hook load capacity Waldrip telescoping derrick.

WRITE FOR DETAILS

WALDRIP ENGINEERING COMPANY

11810 Center Street • Hollydale, California

Cleveland Oil At Alondra Area

Cleveland Oil Co. has decided to seek oil in the Alondra area. With this in mind, location has been staked for Gardena No. 15 in Sec. 22-3s-14w near Cerise Ave. and Compton Blvd.

West Newport Try Runs Log

California Exploration is running electric log in Cagney No. 1 in Sec. 28-6s-10w in the West Newport area. Drilled originally to 2511 ft. a subsequent redrill went to 1963 ft.

Del Mar Try Digs

Without intimation of what may have been uncovered of interest to date, Morton & Sons, Irvine No. 55-1 in the Corona Del Mar area of Orange County continues to drill ahead below 9000 ft.

Desert Well Drilling On

Near Palmdale in Antelope Valley, Willette Oil Co. is drilling at 3757 ft. with Virginia Lee No. 1 in Sec. 20-5n-9w. On formation test between 3559 and 3687 ft. recovery was made up of mud with a few spots of oil. Amapola Oil Corp.'s No. 1 in Sec. 6-6n-12w in the Lancaster area is idle at 1750 ft.

West Newport Test Sets Pipe

Amerada Petroleum Corp.'s Farnsworth No. 46-7 in Sec. 7-6s-10w in the West Newport area is standing with 7-in. cemented at 5432 ft. Bottom is 5555 ft. Republic Operators, Inc., Newland No. 1 in Sec. 12-6s-11w is a location.

Santa Ana Test Cores

Rubicon Oil Co., Wilcox No. 1 in Sec. 6-4n-8w in the Santa Ana Canyon area of Orange County is drilling ahead and spot coring at 6163 ft.

Lawndale Try Deeper

In the old Lawndale field, Seaboard Oil Co. is drilling below 4000 ft. with Johnson No. 1 deep test in Sec. 17-3s-14w. Surface pipe was set at 1012 ft.

Seal Beach Try Working

Marine Exploration Co. has run drillable liner and tubing in its State No. 1 in Sec. 11-5s-12w in the Seal Beach area, preparatory to conducting a production test. Total depth is 8050 ft., with plug at 7935 ft.

The well is whipped from the mainland to beds below the ocean floor.

East Coyote Well Planned

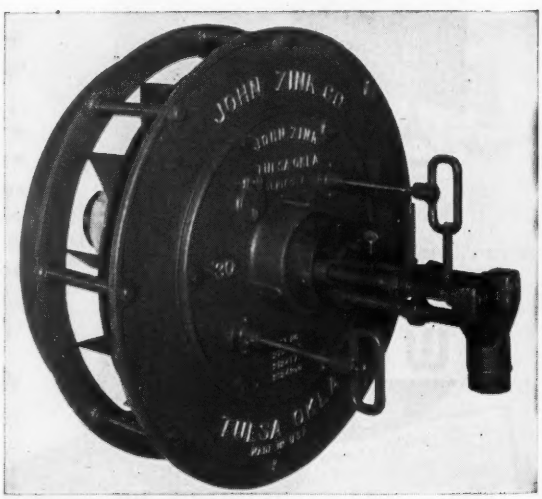
Clayton Severns and Ashley DeWitt are preparing to start Smith No. 1 in Sec. 24-3s-10w in the East Coyote field. The principals are officials of the widely known contracting and producing firm, Severns Drilling Co.

Brea-Olinda Job Listed

Bauer Drilling Co. is ready to drill Monte No. 1 in Sec. 4-3s-9w in the Brea-Olinda area. It will be a cable tool job. J. Harold Bauer heads the company.

JOHN ZINK Series "Y" Register Type

Combination BURNER



Fuel scarcity is no problem if you use John Zink Series "Y" Burners because this burner burns either, or both, gas and oil with the same heat pattern.

- **Easy to operate.**
- **Simple in construction.**
- **Independently removable fuel guns.**
- **Easy to remove fuel guns—Feather weight type, one man can remove for inspection and cleaning while the boiler remains in service.**
- **Uninterrupted Burner service.**

WRITE for LITERATURE

JOHN ZINK COMPANY

4401 South Peoria **Tulsa 1, Oklahoma**

Representative: S. G. Higginbotham, 403 W. 8th St., Los Angeles

San Joaquin Valley

Belridge Try Works

Plugged at 8840 ft., Richfield Oil Corp.'s Belridge No. B-2 in Sec. 21-27s-20e in the North Belridge area is standing with 321 ft. of blank liner cemented at 8840 ft. Total depth is 8896 ft. Wheeler Ridge-KCL No. C-1 in Sec. 20-11n-20w in the Wheeler Ridge area is drilling at 3125 ft.

Premier Test Drilling On

Northwest of the Premier field, Independent Exploration Co. is drilling at 2639 ft. with Kuhn No. 81 in Sec. 15-27s-26e. The firm's Cymric No. 11 in Sec. 21-29s-21e in the Cymric area is going down at 1904 ft. Bowles No. 66-17 in Sec. 17 in the Cymric area has been abandoned. Anderson No. 1 in Sec. 29-28s-20e near Carneros Creek also was production failure in going to a total depth of 2636 ft.

McFarland Venture Finds No Showings

Shell Oil Co. has given up Guth McCaleb Comm. No. 1 in Sec. 12-26s-26e northeast of McFarland in the Woody Road area of Kern County. Nothing of interest was picked up in going to a total depth of 5280 ft.

Cymric Outpost Now Swabbing

Superior Oil Co. is swabbing its F. W. No. 26-23, an easterly outpost of the Cymric field in Sec. 23-29s-21e. Total depth is 6356 ft., with casing cemented at 5494 ft.

Sand Hills Try Deeper

Western Gulf Oil Co. continues to drill steadily ahead at 12,658 ft. with S. P. No. 1 in Sec. 25-12n-20w in the Sand Hills area of Kern County. Crown Zellerbach No. 1 in Sec. 27-25s-24e in the Pond area is drilling at 4130 ft. Di Giorgio No. 1 in Sec. 10-31s-29e in the Arvin area is exploring at 3789 ft.

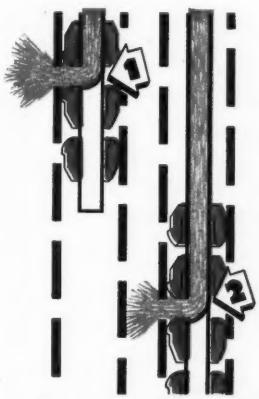
Ducor Test Drills Ahead

Gene Reid Exploration Co. is drilling ahead at 300 ft. with Marley No. 1 in Sec. 14-30s-30e in the Bena area. The project is east of the Edison field and a mile southwest of the old Elmer Oil Co. well, drilled 15 years ago to 5057 ft. Location for Tejon No. 3 has been made in Sec. 23-30s-30e.

The company's Mayo No. 1 in Sec. 13-23s-26e in the Ducor area is drilling below 2800 ft. Location falls between Superior Oil Co.'s abandoned Day No. 1 in Sec. 22 and Terra Bella. Luther T. Mayo is associated with Gene Reid in the play.

Coalinga Job Grades Ground

W. T. and Porter Sesnon of Beverly Hills are grading location to drill a well in the Coalinga area in Sec. 2-21s-14e, Fresno County.



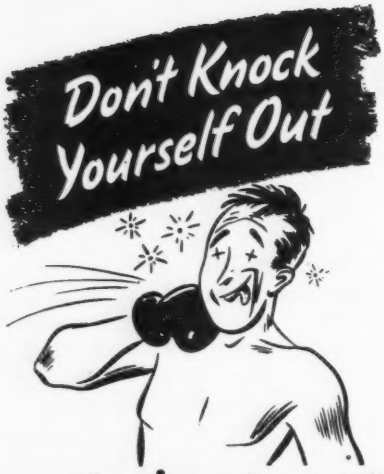
Here's WHY the McGaffey-Taylor PRESSURE WASHER DOES A REAL WELL WASHING JOB

Power — plenty of power to break up the solidified material clogging the slots or perforations, or to scour filter cake from the formation face . . . that's WHY an M-T Pressure Washer really gets results. And here are the TWO reasons it has such tremendous power: (1) The packers can be placed as close together as ¼ inch, confining all the pressure of the wash fluid to a tiny space and building up terrific jetting action. (2) The entire packer assembly moves the full length of the stroke, bringing that powerful jet against every inch of wall or liner.

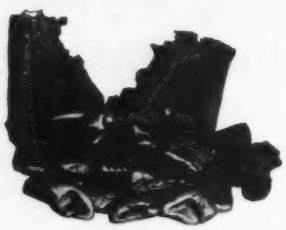
In short, it acts just as you do when you wash mud off your driveway. You adjust the nozzle for a narrow stream to give greater force, and you sweep that stream back and forth until the pavement is clean. But you'll want the full details on pressure washing, so

Write for NEW Well Washing Bulletin, or ask a representative to demonstrate transparent model.

McGaffey-Taylor CORPORATION
WELL-WASHING SERVICE
2852 CHERRY AVENUE, LONG BEACH 7, CALIFORNIA
PIERCE ROAD, BAKERSFIELD, CALIFORNIA



. . . trying to get this sort of junk out of your well!



(Below) An assortment of Metal Junk

(Above) Rubber Sleeve, Slips, and Pieces of Body of Bridging Plug

Any loose and movable junk can be recovered easily with the

CAVINS
HYDRAULIC SUCTION
FISHING TOOL

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Poso Creek Test Starts

General Drilling Co. is ready to start work on Fitzhugh No. 1 in Sec. 24-27-27 in the Poso Creek area. The try is located on a 120-acre lease, offsetting production established by Trico Oil & Gas Co.

Edison Test Pulling Rods

Union Oil Co. is pulling rods and tubing from Smith No. 63-28 in Sec. 28-30s-29e west of the Edison field. The well sanded up after pumping from 4309 ft.

McKittrick Effort Grades

About a mile and one-half from the McKittrick field, Pacific Western Oil Corp. is grading location in Sec. 30-30s-22e for M. & M. No. A-84-30. National Royalties No. 1 in Sec. 5-26s-22e in the Miramonte area is redrilling at 9481 ft.

Sharktooth Try Quits Oil Search

Barnsdall Oil Co. has pulled out of its S. P. No. 1 in Sec. 25-28s-28e in the Sharktooth area. The project explored to 2670 ft. in gray sand.

Pyramid Hills Project Swabs

Cal Valley Oil Co. is swabbing well No. 13 in Sec. 17-24s-18e in the Pyramid Hills area of Kings County. Perforated intervals are 690-710 ft. and 1060-1185 ft. Total depth is 1885 ft., with plug at 1300 ft. The try shows considerable promise.

Edison Try Quits

Nothing of interest was found to 3471 ft. with the result Caliente Oil Co. has abandoned Cohn Estate No. 1 near the Edison field in Sec. 12-30s-29e.

Cantua Creek Well Drilling

Cantua Creek Oil Co. is drilling at 4946 ft. with S. P. No. 1 in Sec. 3-17s-15e in the Cantua Creek area, Fresno County.

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Coastal and Northern District

Arroyo Grande Active Field

Adams Oil Co., fast growing producing organization, has announced the acquisition of 286 acres of Keenan-Spinks ground in the Arroyo Grande area of San Luis Obispo County. The property adjoins the company's Holmes and Dolley fee property. Adams now holds more than 2500 acres in the area.

Adams' Dolley No. 10 in Sec. 6-32s-13e is drilling at 463 ft. No. 8 was completed recently at 1439 ft. for an initial yield of 90 barrels of oil daily on the pump. No. 9 is a location. Holmes No. 1 has just been given the finishing touches at 1490 ft. It made more than 100 barrels a day.

The company announced that under consideration was a deep test for its ground in the Casmalia field. A program of new Chert zone jobs there also is in the offing.

Ventura Project Flows to Sump

Swabbed and at last reports flowing to sump was Shell Oil Co.'s Hartman No. 1 in Sec. 22-3n-23w in the Ventura Aveune field. Drilled to a total depth of 12,800 ft. yield so far is unestimated, but an excellent producer is indicated. Bolsa Chica Oil Corp. is the holder of adjacent property.

Goleta Prospect Rigging Derrick

Ohio Oil Co. is rigging derrick to start the drill in Thomas B. Bishop Co. No. 1 in Sec. 7-4n-28w in the Goleta area of Santa Barbraa County.

Oxnard Explorer Drilling Ahead

Drilling is continuing at a normal pace around 4150 ft. in Andrew Lucas' Pfeiler No. 1 near Oxnard in Sec. 1-1n-22w, Ventura County.

Dixon Gas Test Making Hole Ahead

In the Dixon area of Solano County, Amerada Petroleum Corp. is drilling at 3680 ft. with Marie Wineman No. 1 in Sec. 22-6n-2e. Surface pipe is set at 620 ft.

Willows Try Makes Progress

General Petroleum Corp., Llano Seco No. 1 in Sec. 33-20n-1w in the Willows area, Butte County, is going on down below 7300 ft.

Yolo County Test Grading

Shell Oil Co. is grading location for Meridian Unit No. 1-1, a gas test in Sec. 5-9n-1e in the Meridian area of Yolo County. Winters Unit No. 3-1 in Sec. 18-8n-1e in the Winters area is starting work.

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Cat Canyon Try Swabbing

Swabbing water with a few specks of oil was the latest word from General Petroleum Corp.'s Dominion No. 41-14 in Sec. 14-9n-33w on wildcat ground in the Cat Canyon. area. Total depth is 5071 ft. A succession of trials have been conducted uphole to 3000 ft.

Kirby Hills Try Sets Pipe

Standard of California's Kirby Comm. No. 5 in Sec. 23-4n-1w in the Kirby Hills of Solano County is standing with 7-in. casing cemented at 2598 ft. Total depth is 2992 ft. Guiguere No. 1 is a location in Sec. 7-11n-1w in Dunnigan Hills, Yolo County.

Zaca Try Digs Cellar

Tide Water Associated Oil Co. has cellar in for Luton No. 71, a wildcat test well situated about three-quarters of a mile northwest of nearest production in Sec. 32-8n-31w in the Zaca area, Santa Barbara County.

Piru Creek Try Reaming

Near Piru Creek, Bolsa Chica Oil Corp. is reaming rat hole in Bolsa Chica No. 76-32 in Sec. 32-5n-18w, Ventura County.

West Mountain Test Drilling

D. D. Feldman, Operator, Richardson Estate No. 4 in Sec. 23-3n-21w in the West Mountain area is making hole ahead at 2113 ft.

Ojai Test Starting

Richfield Oil Corp. is ready to spud Ojai No. 46 in Sec. 13-4n-22w in the Ojai area. No. 45 is rigging to pump from 3375 ft.

McGrath Coring In Montalvo Area

Standard of California's second well in the Montalvo area, McGrath No. 65-3 in Sec. 30-2n-22w, is coring at 8665 ft., with oil sand encounter expected any time. Three miles east, Maxwell No. 1 in Sec. 23-2n-23w is making hole at 1750 ft.

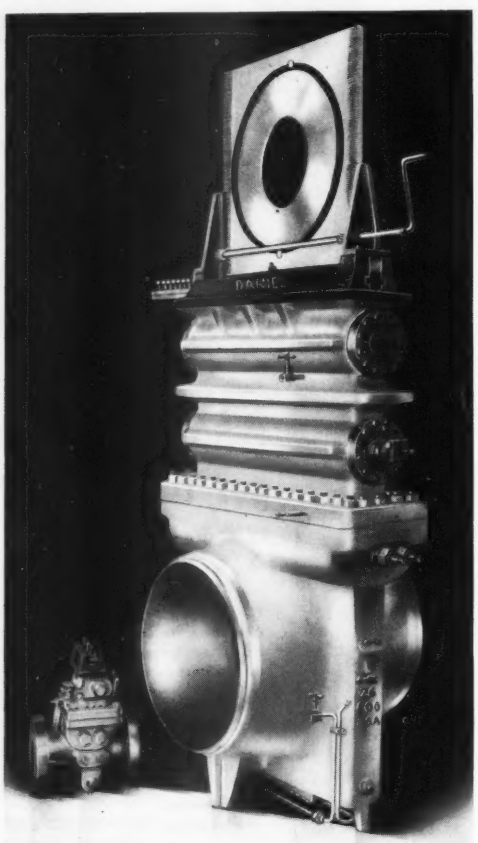
Orcutt Wildcat Swabbed Water

Los Flores No. 1, sponsored by Sunray Oil Corp. in Sec. 4-8n-33w near the Orcutt field, on test above 5467 ft. swabbed water. The project may be perforated at 4806-4840 ft. for another test uphole. Total depth is 5998 ft.

Simi Test Prospecting

Union Oil Co. has several interesting test wells drilling along the coast.

C. D. L. B. No. 4 in Sec. 32-3n-18w in the Simi area is drilling at 2520 ft. Simi No. 9 is a location in Sec. 18-3n-17w. Henderson No. 1 in Sec. 23-3n-21w at West Mountain is spot coring at 3502 ft. In the Nipomo area of San Luis Obispo County, Vernon Wineman No. 2 is spot coring below 3600 ft.



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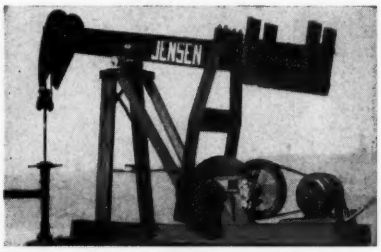

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Kern River Jobs Listed

Brokers Drilling Co. is starting Brokers No. 1 in Sec. 8-29s-28e in the Kern River field. L. I. White & Associates is drilling at 650 ft. with well No. 1 in Sec. 6. Both concerns maintain offices in Bakersfield.

Ten Section Project Works

Shell Oil Co. is redrilling at 11,784 ft. with KCL-A No. 53-30 in Sec. 30-30s-26e in the Ten Section area. Original bottom is 13,745 ft.

Coalinga Test Making Progress

Drilling is continuing ahead at a depth of 8218 ft. in Robert S. Lytle, Operator, No. 58-34 in Sec. 34-20s-15e in the Coalinga area.

Signal Grades McDonald Test

Signal Oil & Gas Co. is grading location for Signal-Honolulu-Carpenter No. 2 in Sec. 6-28s-19e on the McDonald Anticline area, Kern County.

San Emigdio Job Resuming

Continental Oil Co. is preparing to resume drilling K.C.L. No. L-1 in Sec. 11-11n-22w in the San Emigdio area. Present depth is 10,424 ft.

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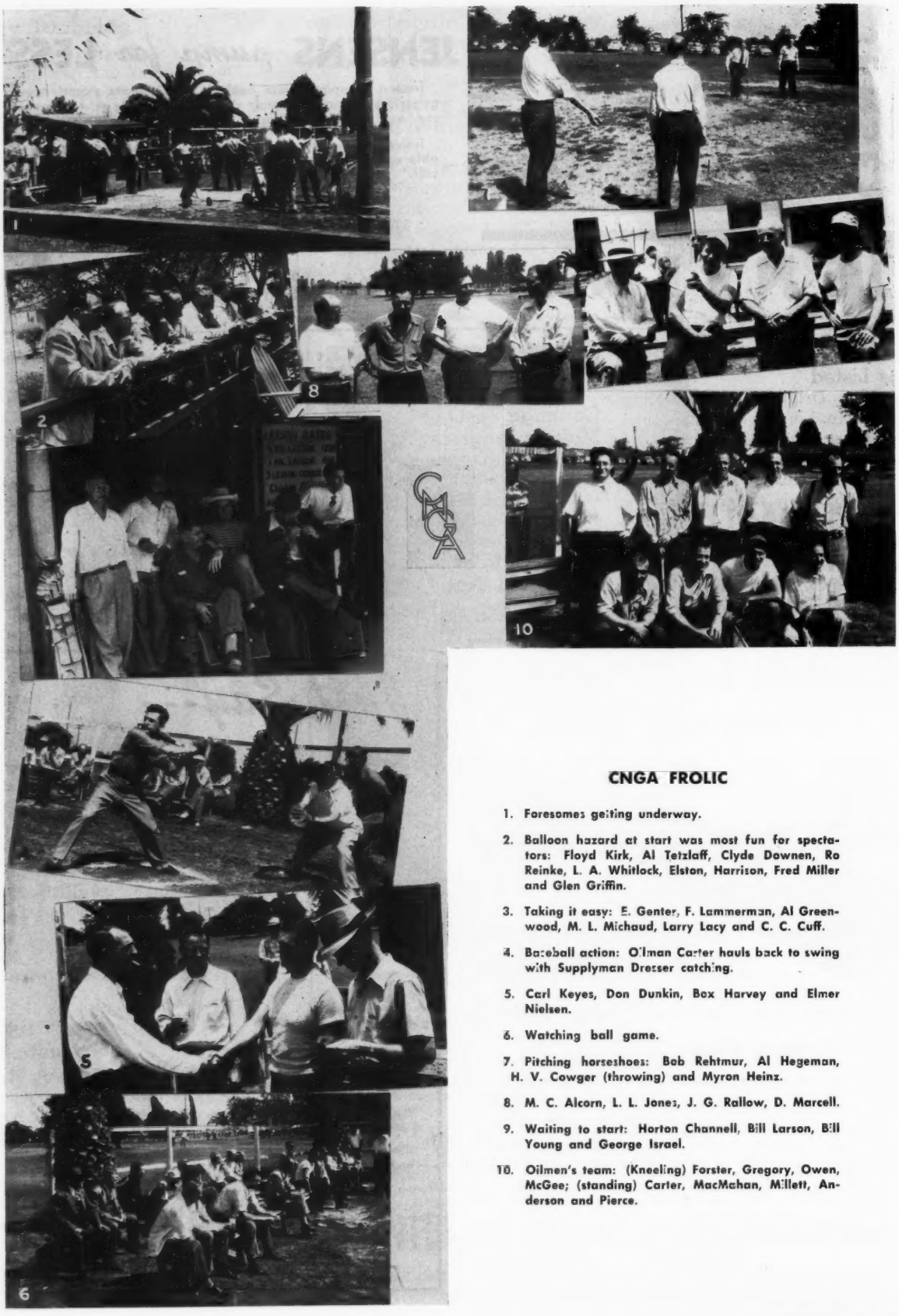
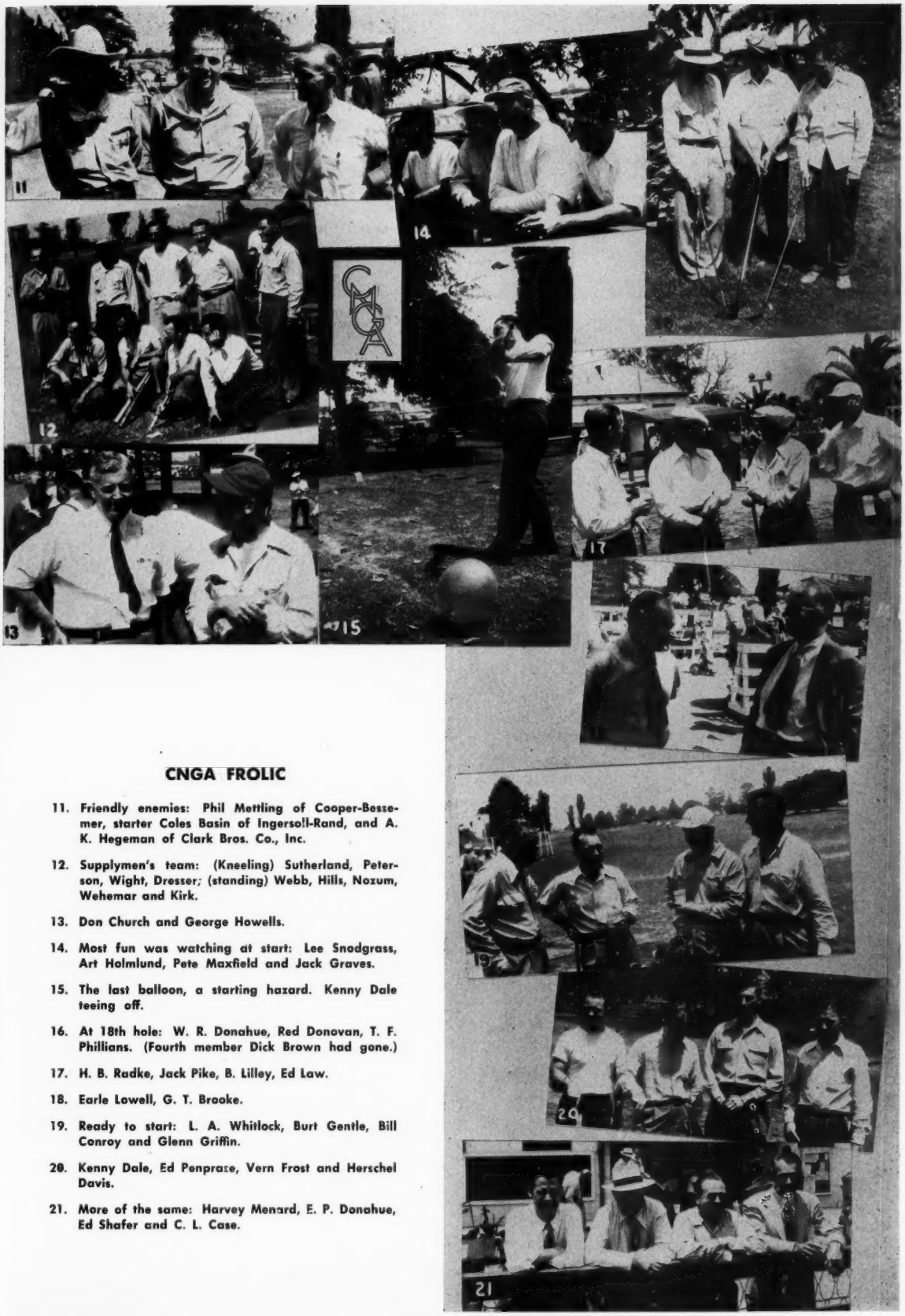


CNGA FROLIC

1. Foresomes getting underway.
2. Balloon hazard at start was most fun for spectators: Floyd Kirk, Al Tetzlaff, Clyde Downen, Ro Reinke, L. A. Whitlock, Elston, Harrison, Fred Miller and Glen Griffin.
3. Taking it easy: E. Genter, F. Lammerman, Al Greenwood, M. L. Michaud, Larry Lacy and C. C. Cuff.
4. Baseball action: Oilman Carter hauls back to swing with Supplyman Dresser catching.
5. Carl Keyes, Don Dunkin, Box Harvey and Elmer Nielsen.
6. Watching ball game.
7. Pitching horseshoes: Bob Rehtmur, Al Hegeman, H. V. Cowger (throwing) and Myron Heinz.
8. M. C. Alcorn, L. L. Jones, J. G. Rallow, D. Marcell.
9. Waiting to start: Horton Channell, Bill Larson, Bill Young and George Israel.
10. Oilmen's team: (Kneeling) Forster, Gregory, Owen, McGee; (standing) Carter, MacMahan, Millett, Anderson and Pierce.



CNGA FROLIC

11. Friendly enemies: Phil Mettling of Cooper-Bessemer, starter Coles Basin of Ingersoll-Rand, and A. K. Hegeman of Clark Bros. Co., Inc.

12. Supplymen's team: (Kneeling) Sutherland, Peterson, Wight, Dresser; (standing) Webb, Hills, Nozum, Wehemar and Kirk.

13. Don Church and George Howells.

14. Most fun was watching at start: Lee Snodgrass, Art Holmlund, Pete Maxfield and Jack Graves.

15. The last balloon, a starting hazard. Kenny Dale teeing off.

16. At 18th hole: W. R. Donahue, Red Donovan, T. F. Phillians. (Fourth member Dick Brown had gone.)

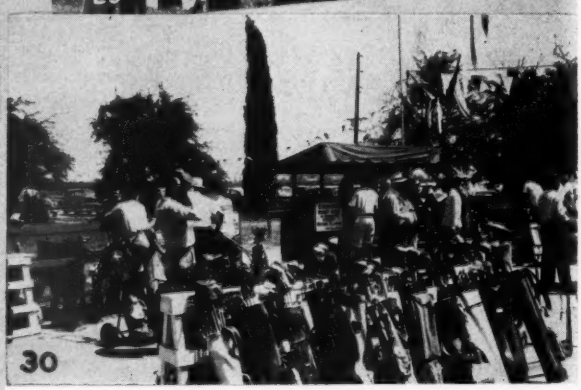
17. H. B. Radke, Jack Pike, B. Lilley, Ed Law.

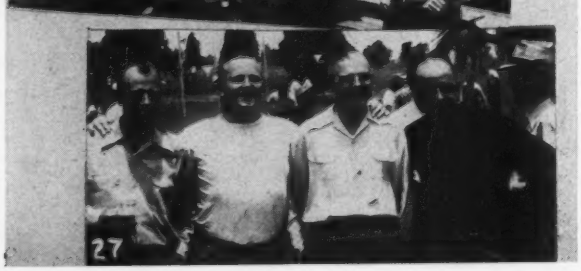
18. Earle Lowell, G. T. Brooke.

19. Ready to start: L. A. Whitlock, Burt Gentle, Bill Conroy and Glenn Griffin.

20. Kenny Dale, Ed Penprase, Vern Frost and Herschel Davis.

21. More of the same: Harvey Menard, E. P. Donahue, Ed Shafer and C. L. Case.





CNGA FROLIC

22. Putting at 11th hole: Wm. J. Martin, J. T. Nicholson and D. H. Price.

23. Lou Rowson, Harmon Swan, Bill Gregory, George Forster.

24. Just arrived: T. W. Pinkston, T. W. Pinkston, Jr., L. G. Graf, A. V. Daricunas and D. M. Pickett.

25. Refreshments: Bob Saunders, Al Vigo, Ed Bishop and Howard Wight.

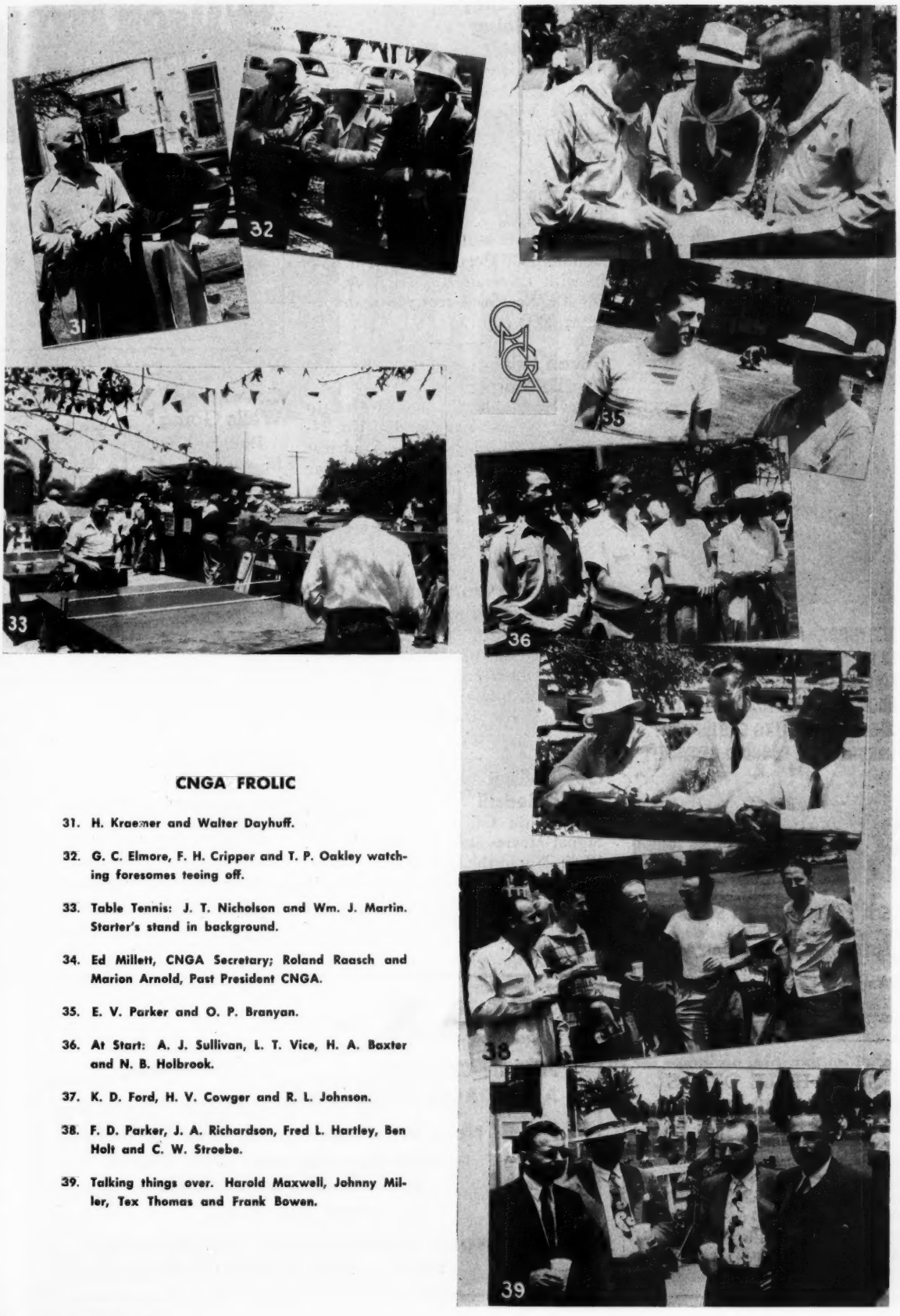
26. P. C. Lyman, V. M. Burch, L. W. Daigle, F. J. Bennett.

27. A. M. Cutler, Gus Lagerquist, Martin Newell and Gordon Z. Greene.

28. Waiting to start: Ro Reinke, A. R. Pickard, F. E. Latham and F. E. Miller.

29. All set to tee off: J. P. Wiseman, J. H. Deiter, Guy Martin and Ed. Michael.

30. View at Starter's stand.



CNGA FROLIC

31. H. Kraemer and Walter Dayhuff.

32. G. C. Elmore, F. H. Cripper and T. P. Oakley watching foresomes teeing off.

33. Table Tennis: J. T. Nicholson and Wm. J. Martin. Starter's stand in background.

34. Ed Millett, CNGA Secretary; Roland Raasch and Marion Arnold, Past President CNGA.

35. E. V. Parker and O. P. Branyan.

36. At Start: A. J. Sullivan, L. T. Vice, H. A. Baxter and N. B. Holbrook.

37. K. D. Ford, H. V. Cowger and R. L. Johnson.

38. F. D. Parker, J. A. Richardson, Fred L. Hartley, Ben Holt and C. W. Stroebe.

39. Talking things over. Harold Maxwell, Johnny Miller, Tex Thomas and Frank Bowen.

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McLure Valley Project Going

In the McLure Valley area of Kings County, Group Oil Operations, Inc., Avenal No. 1 in Sec. 15-24s-17e is digging at 1548 ft. Offset acreage is held by Severns Drilling Co.

McDonald Test Digs

On the McDonald Anticline, Honolulu Oil Corp. is drilling at 1623 ft. with Layman No. 3 in Sec. 18-28s-20e. No. 2 was recently abandoned at 2090 ft.

Bacon Hils Try Drilling

Seaboard Oil Co. has drilled to 4380 ft. in Seaboard-Bandini No. 24-21 in Sec. 21-28s-20e, its second test of the Bacon Hills structure. Near Panoche Creek, Fresno County, the company is spot coring at 3208 ft. with Lillis No. 85-36 in Sec. 36-15s-12e.

Snowball Mountain Wildcat Drilling

On Snowball Mountain not far from the town of Carpinteria, M. T. Grubb, Operator, is drilling at 5989 ft. in hard sand and shale with Snowball No. 1 in Sec. 19-4n-24w, Ventura County.

Goleta Test Plans Redrill

Honolulu Oil Corp.'s Honolulu-Signal-Macco-State No. 309-1 in Sec. 19-4n-28w in the Goleta area, a slant hole which blew wild for a time in going to an original depth of 3962 ft., is plugged at 700 ft. preparatory to redrilling.

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Cat Canyon Wells Going

Douglas Oil Co. is drilling at 5339 ft. with No. 11 in Sec. 22-9n-33w in the Cat Canyon area. No. 14 is making hole at 6198 ft.

Sespe Field Well Scene

Eagle Rock Petroleum Co. is grading roads to drill a well with cable tools in Sec. 36-5n-20w in the Sespe field. Luther Cox is superintendent.

J. E. Warren of Midland, Tex., president of the American Association of Oilwell Drilling Contractors, was appointed chairman of a special committee by the Independent Petroleum Association of America investigating the steel situation, particularly oil country tubing products. J. W. Hancock, Huntington Beach oil man, has been named a member of the committee.

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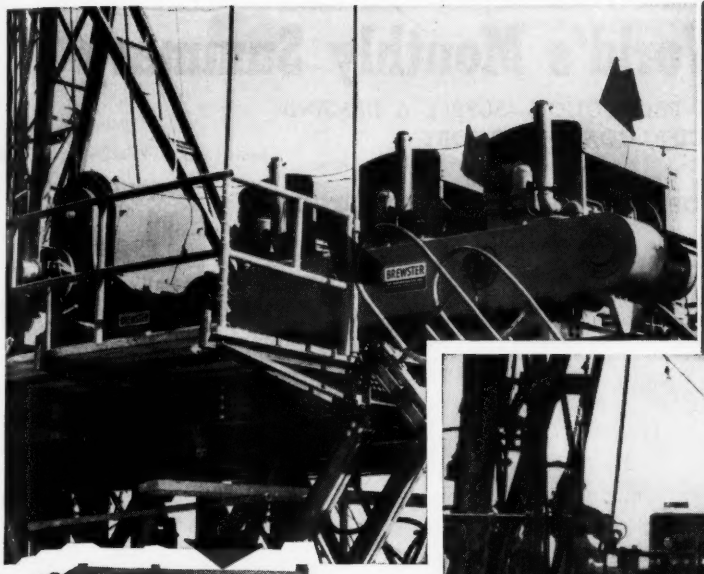

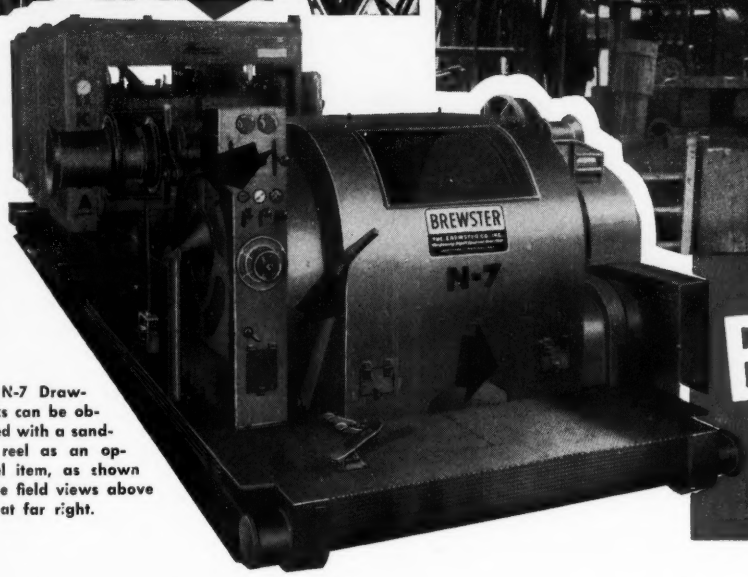

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California Oil World's Monthly Summary

DEVELOPMENT—PRODUCTION—SUPPLY & DEMAND
PACIFIC COAST TERRITORY

TABLE I—CALIFORNIA DEVELOPMENT—PRODUCTION

	APRIL, 1947 DEVELOPMENT				PRODUCTION	
	Active Drilling Wells	Oil Wells Completed	Initial Production B/D	Oil Wells Completed First 4 Months	Daily Average April 1947	Daily Average April 1946
SAN JOAQUIN VALLEY REGION						
Ant Hill	.....	.....	.....	1	1,567	1,431
Bellevue	.....	.....	.....	.....	309	425
Belridge—North	1	.....	.....	.....	5,821	5,834
Belridge—South	2	3	41	15	9,438	10,852
Blackwells' Corner	.....	.....	.....	.....	179	187
Buena Vista Hills	.....	.....	.....	5	46,926	40,160
Canal	.....	.....	.....	.....	2,055	2,952
Coalinga Group						
Eastside	3	3	131	3	15,588	17,343
Oil City	.....	.....	.....	3	97	104
Coalinga—Nose	.....	.....	.....	.....	51,897	48,118
Coalinga—Northeast	.....	.....	.....	1	8,463	8,483
Pleasant Valley	.....	.....	.....	1	4,124	3,835
Jacalitos	4	2	275	8	4,728	4,638
Westside	.....	.....	.....	1	6,839	7,189
Coles Levee—North	3	.....	.....	1	16,645	15,126
Coles Levee—South	2	.....	.....	1	3,259	1,834
Edison	.....	1	66	7	11,135	14,893
Elk Hills	6	2	275	5	7,678	14,624
Fruitvale	.....	.....	.....	.....	6,901	7,696
Greeley	.....	.....	.....	.....	10,072	11,008
Helm	.....	.....	.....	2	4,221	4,194
Kern Front	2	2	133	9	8,924	9,047
Kern River	3	2	72	11	9,865	9,993
Kettleman North Dome	5	1	779	6	37,133	37,525
Lanare	1	.....	.....	1	2,238	1,905
Lost Hills	2	8	447	36	4,924	3,567
McKittrick Group						
Cymric	2	2	841	16	14,048	7,005
McKittrick	.....	1	300	1	2,943	3,072
McKittrick Front	1	3	104	4	1,463	1,517
Salt Creek	5	7	1,287	31	5,474	649
Sheep Springs	1	.....	.....	.....	362	499
Temblor Ranch	.....	1	15	1	120	16
Midway-Sunset	4	4	446	19	43,123	42,968
Mt. Poso Group	2	2	16	2	14,569	17,125
Mountain View	2	.....	.....	6	6,349	2,936
Paloma	7	6	2,705	15	8,003	5,346
Poso Creek Group	.....	2	196	7	3,761	3,953
Pyramid Hills	1	.....	.....	.....	279	344
Race Track Hill	2	2	235	4	2,106	1,189
Raisin City	.....	.....	.....	.....	2,748	2,519
Rio Bravo	.....	.....	.....	.....	12,461	13,405
Riverdale	.....	1	243	1	4,358	3,827
Rosedale Ranch	.....	.....	.....	.....	114	118
Round Mountain Group	.....	.....	.....	5	8,971	9,330
Strand	.....	.....	.....	.....	1,489	1,830
Strand—East	.....	.....	.....	.....	496	560
Tejon Ranch	2	2	277	9	3,168	942
Ten Section	1	.....	.....	.....	7,776	8,983
Union Avenue	.....	.....	.....	.....	334	392
Wasco	.....	.....	.....	.....	204	859
Wheeler Ridge	.....	.....	.....	.....	217	235
Williams	.....	.....	.....	.....	1,352	1,616
Other Fields	3	3	630	9	513	253
TOTAL—San Joaquin Valley Region	67	60	9,514	247	427,827	414,451
COASTAL REGION						
Santa Maria District						
Casmalia	.....	.....	.....	.....	480	240
Cat Canyon—East	.....	.....	.....	.....	598	293
Cat Canyon—West	5	2	185	13	11,185	7,496
Gato Ridge	.....	.....	.....	.....	3,468	3,874
Lompoc	2	1	203	16	4,212	1,558
Orcutt	1	3	236	11	4,124	3,564
Santa Maria Valley	2	3	306	15	28,336	34,605
Zaca Creek	1	.....	.....	.....	481	320

	APRIL, 1947 DEVELOPMENT				PRODUCTION	
	Active Drilling Wells	Oil Wells Completed	Initial Production B/D	Oil Wells Completed First 4 Months	Daily Average April 1947	Daily Average April 1946
COASTAL REGION—Continued						
Santa Barbara District						
Capitan	.....	.....	.....	.....	2,836	3,557
Elwood	3	1	150	3	7,320	6,361
Santa Barbara	.....	.....	.....	.....	93	89
Summerland	.....	.....	.....	.....	2	6
Ventura District						
Montalvo West	.....	1	242	1	82	.....
Padre Canyon	1	2	757	4	3,133	2,509
Rincon	.....	.....	.....	.....	3,872	4,714
San Miguelito	3	.....	.....	2	4,925	4,694
Ventura Avenue	8	2	1,080	15	46,570	45,154
North Santa Clara District						
Del Valle	3	2	415	7	8,146	6,211
Hopper Canyon	1	.....	.....	.....	165	109
Oak Canyon	.....	.....	.....	.....	1,623	1,857
Sespe Canyon Group	.....	.....	.....	.....	214	304
Temescal	.....	.....	.....	.....	604	680
Others	.....	.....	.....	.....	256	240
South Santa Clara Valley District						
Aliso Canyon	1	1	725	2	3,440	2,958
Bardsdale	1	.....	.....	.....	379	485
Newhall-Potrero	2	.....	.....	2	6,161	5,614
Oxnard	.....	.....	.....	.....	1,129	1,126
Shiells Canyon	.....	2	63	3	1,056	1,362
South Mountain	2	1	417	4	4,796	3,262
Others	3	2	338	10	1,066	264
San Luis Obispo and Santa Clara Counties	1	2	131	2	25	56
TOTAL—Coastal Region	40	25	5,248	110	150.777	143,562
LOS ANGELES REGION						
Brea-Olinda	4	1	191	10	11,354	10,741
Coyote—East	1	1	45	6	4,995	4,884
Coyote—West	1	1	144	8	15,355	15,598
Dominguez	2	1	556	6	14,794	16,688
East Los Angeles	1	1	660	2	1,064	503
El Segundo	.....	.....	.....	.....	426	529
Huntington Beach	4	3	588	15	49,367	46,714
Inglewood	1	1	550	1	11,943	13,666
Long Beach	2	.....	.....	1	23,772	25,528
Montebello	.....	.....	.....	1	7,579	8,897
Newport	1	2	472	33	7,379	4,221
Playa Del Rey	.....	.....	.....	.....	2,138	2,446
Potrero	1	.....	.....	.....	836	933
Richfield	1	.....	.....	5	6,605	7,166
Rosecrans-Athens	.....	.....	.....	.....	4,640	5,077
Santa Fe Springs	.....	.....	.....	.....	16,348	16,875
Seal Beach	5	1	301	5	10,786	10,226
Torrance	1	.....	.....	1	8,321	8,816
Whittier	1	.....	.....	.....	994	1,034
Wilmington	19	22	9,291	68	127,064	100,085
Yorba Linda	.....	.....	.....	.....	194	268
Other Fields	1	1	500	1	1,759	949
TOTAL—Los Angeles Region	46	35	13,298	163	327,713	301,844
EXPLORATORY						
Outpost Wells	25	.....	.....	.....	.....	.....
Wildcats	16	.....	.....	.....	.....	.....
Gas Wells	1	4	Gas	19	.....	.....
TOTAL CALIFORNIA	195	124	28,060	672*	906,317	859,857

* Includes gas wells completed and 133 drilling wells abandoned.

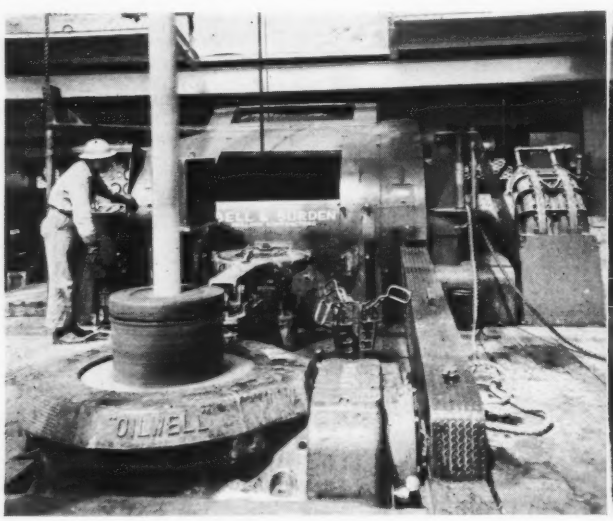
"Oilwell" No. 96 Rig— Bell & Burden at Ventura

This is a new "finger touch control" draw-works with all controls in a panel at the drillers position. Conveniently located levers operate air valves for remote control of Fawick Airflex Clutches on the engines output shafts, compounding clutches for the engines, pump drive friction clutch, standard automotive type gear shift lever for speed selection in transmission unit, high and low side of drum through friction clutches. Levers also operate, by means of air, the catheads, rotary drive, sand reel and disengaging clutch on the Hydromatic Brake. Additional levers, together with a foot pedal, operate the remote air throttle controls for the engines.

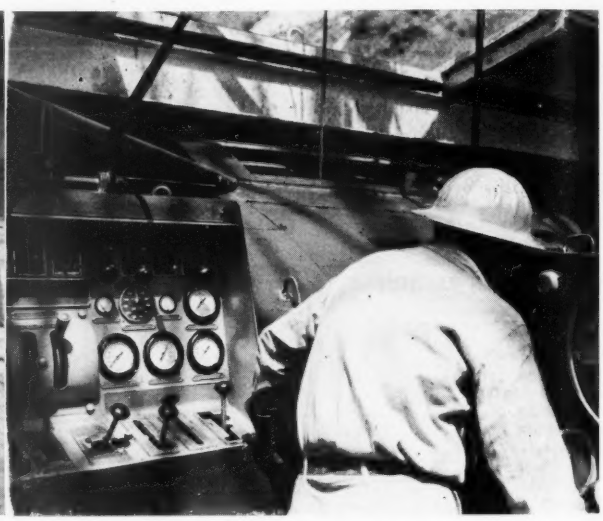
Various gauges on the panel give engine vacuum readings, shaft speeds, temperatures, air pressures on various clutches, etc.

One of the outstanding features of the draw-works is its compactness and ease of installation. It can be transported as a unit without the necessity of disturbing oil tight guards or "breaking" any chain drives with the single exception of the one main drive from the engines to the hoist.

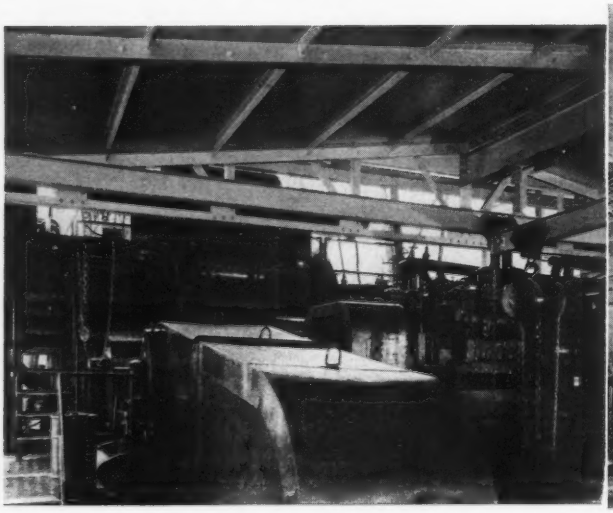
The use of two General Motors Quad Power Units on this rig was



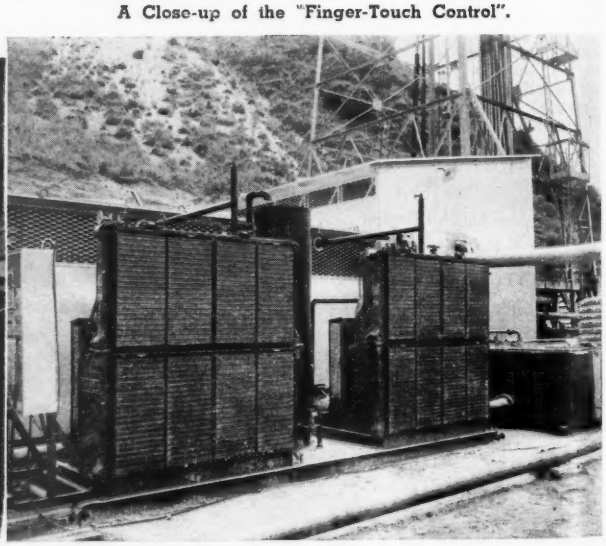
On The Derrick Floor.



A Close-up of the "Finger-Touch Control".



Two General Motors Quad Power Units.



To Eliminate Noise an Outside Cooling Plant Was Installed.

mainly to conserve space. A maximum amount of power was desired in the smallest possible area in order to eliminate a portion of hillside excavations for rig locations near Ventura. The engines and transmission extend less than fourteen feet back of the hoist.

The entire power plant and transmission compound drive for the hoist may be moved in three pieces which are furnished with dowels and blocks for quick alignment and bolting together.

To date this rig is the only one in California equipped with the G-M Quad Units.

In order to eliminate noise and uncomfortably hot air in the engine house, all engine radiators and fans were left off and an outside central cooling plant was installed. The plant consists of two large Young Radiators of the type used in compressor plants. Both radiators are mounted on one set of skids and their fans are separately driven by two ten horsepower electric motors. Shutters are thermostatically controlled for constant temperature. In addition to the eight engines for the hoist the fans also cool water for a G-M Twin on a standby pump, the cooling water for the mechanical drum brakes and the 40" Double Hydromatic Brake.

Additional net horsepower is gained back of the hoist by elimination of fans and overall higher efficiency is possible.

Other equipment on the rig consists of a new "Oilwell" Superspeed 21" Rotary and B-J Air Slips.

A specially designed portable steel engine house covers all engines and pumps with ample room for work benches and storage. The entire building is built on steel sub-structures and has open grill type flooring.

Cymric Project Running Casing

The Rothschild-Bender Oil Operations, Sheep Springs No. 8 in Sec. 17-29s-21e in the Cymric area, which blew out some weeks ago, causing drill pipe to stick, has sidetracked fish and is running casing. Total depth is 4885 ft. in the Oceanic zone for a new pool discovery.

Globe Oil Tools Company Appoints Rocky Mountain Representative

Globe Oil Tools Company, Los Nietos, California, recently announced the appointment of T-P Tool Company as sales and service representative for Globe Products in the Rocky Mountain area.

T-P Tool Company's main office is located in Denver, Colorado. Warehouse branches are maintained in Cody, Wyoming and Rangely, Colorado.

Partners in the T-P Tool Co. are S. W. (Sam) Turner and T. E. (Tip) Powers, both of whom have had many years oil field experience and are well acquainted in the Rocky Mountain area. Mr. Powers, in addition to his many business activities, is also Secretary-Treasurer of the Denver Petroleum Engineers Club.

National Issues New Bulletin

Shop photographs showing the cutting of an Ideal rotary main gear are a feature of a new bulletin issued on The National Supply Company's Type FE-17½ rotary machine for shallow to medium depth drilling. The bulletin, No. 341, also gives the general specifications of the machine, carries blueprints giving lubrication specifications and a series of explosion photographs showing the construction of the rotary. The bulletin can be obtained by writing The National Supply Company, P. O. Box 899A, Toledo 1, Ohio.

Union Pacific Campaign Proving a Success

A Union Pacific-inspired campaign among the nation's railroads, manufacturers and shippers to cut freight losses due to damage enroute is beginning to bear fruit.

Coincident with public circulation of a new folder giving shippers several tips on better packaging, G. F. Ashby, Union Pacific President, revealed the road's latest service to shippers has brought favorable comment from them as well as indications that the idea is spreading rapidly to other lines.

"Our container engineer, the first one ever employed by any American railroad," Mr. Ashby said, "has given personal packaging advice to more than 500 manufacturers and shippers in the little more than his first year of operations.

"Of these, some 115 have voluntarily written us, complimenting us on the high type of service given them. Several other Railroads also have written asking for information on the new service."

In addition, The Association of American Railroads has circularized its members with a letter written by Mr. Ashby to W. T. Faricy, AAR President, suggesting that all railroads employ container engineers to cut losses in freight damages enroute.

Union Pacific's container engineer, Warren R. White, was first employed shortly after V-J day to advise shippers on proper packaging methods and help protect their shipments from damage.

In one week, the railroad mailed more than 20,000 copies of its new folder on packaging tips to shippers and their traffic managers throughout the nation.

New Technical Bulletin Announced

M. W. Kibre, President of California Natural Gasoline Association, announced the completion for publication of TS-461 "Tentative Standard Procedure for the Determination of Superexpansibility and Manometer Factors Used in Measurement of Natural Gas by Orifice Meter at Pressures in Excess of 500 Psig."

Under the direction of E. P. Valby, chairman of the Technical Committee, a joint committee consisting of the California Natural Gasoline Association, Pacific Coast Gas Association and the Southern California Meter Association compiled the data to supplement Bulletins TS-353, TS-354 and TS-402. It is felt that this bulletin will fulfill the need for supplemental superexpansibility factors and manometer factors created by the advent of metering installations measuring gas at pressures in excess of 500 Psig.

This bulletin is now in the hands of the printers and will be available for distribution about July 1, 1947.

June Meeting A.I.M.E.

(Continued from Page 27)

Chamber of Commerce and member of the Executive Committee of the local section of the A.I.M.E. The pictures were made during a trip taken through Nevada in April of this year in which all of the active mining areas in the State were visited.

A number of members and guests from outside the state were present which included D. F. Hewitt of Washington, D. C., and Fred Ninnis of Tonopah, Nevada. In addition six student members were special guests at the meeting. Edwin Buffington, Harold Mooney and Lauren Wright, graduate students representing Cal-Tech, were present. The U.S.C. Student Chapter was represented by Eugene Cox, president of the student chapter, Jack Severns, vice-president, and Bernard Johnston, treasurer. Individual members of the Section were hosts to the students.

Gas Pipeline Story

(Continued from Page 9)

independently of its neighbor and due to the loose fit around the pipe and the normal flexing of the flat bar some lateral movement is obtained. The movement in either plane being least near the 2" pipe this closely controls the size of material which will be in contact with the pipe coating.

Although this equipment should be attached to the backfiller and moved by it, the present backfiller is already overloaded and unable to pull the added load. A separate tractor is used, its moves being coordinated with those of the backfiller. In operation the backfiller pulls the spoil on the grating and the towing tractor moves ahead about 4 to 5 feet, this movement tending to shake the finer material through the bars and on to the pipe, the coarser material sliding off the ends of the bars to the rear.

While the normal trench width is only 42" we have made this device 8 feet wide since invariably where its use will be required the material is of such a nature that the trench banks will not stand uniformly and in many cases the trenching is done with a back hoes. Where the trench width is 42" the outer two quarters of the bars lie flat on ground surface and as the trench widens more bars become active in screening the material.

Canal Crossings

As mentioned before, we have our share of railroad, highway and irrigation canal crossings to contend with in both divisions.

In the Palo Verde Valley, an agricultural area solely dependent upon irrigation canals for its water supply, we had more than our share when eight major canals, one railroad and one highway had to be cased. It was necessary to install the 36" casings under the canals ahead of construction in January because that month is the time of minimum water demand and the only month in which the canals could be dried for open cutting. Due to the high water table, 4 to 5 feet below ground, and the extremely fine river sand, it was impractical to attempt boring. The work had to be performed under a rigidly fixed time schedule with the constant threat that if something went wrong, that particular canal had to be put back in service on schedule without regard to whether the job was completed or not and no second attempt could be made until the following January.

Colorado River Crossing

At the Colorado River, the line will cross the channel on a suspension bridge with a span between towers of 1020 feet and at a height above the river of about 40 feet. The bridge tower foundations consist of 11 foot diameter caissons sunk to 56 feet with 14 steel beams piling driven to firm footing below the caisson. On the Arizona side, rock was reached at 65 to 70 feet; however, on the California side, a depth of 150 feet below ground was necessary before a firm footing was reached.

In sinking the caissons, several large trees were encountered at about 35 foot depth. These were cut outside the caissons with a special cutter driven by the pile driver. After cutting, the trees were brought to the surface through the caissons and found to be 18 to 20 inches in diameter.

The main cables and wind cables are anchored in concrete blocks 40 feet long by 20 feet wide and 15 feet deep. These blocks have 35 steel H beam piling driven on a 4 to 1 batter.

The pipe extends to just past the towers, and then turns at 90° and slightly down, a distance of 120 feet where it is below ground level, again turning 90° to join the line. Insulating flanges will separate the line from the pipe in the bridge.

C.N.G.A. June Frolic

Members and their guests gathered for the annual California Natural Gasoline Association's June Frolic on June 7th at Rio Hondo Golf Club. This was the largest of all the Frolics with over 800 participating in the day's festivities.

Over 200 took part in the Blind Bogey Golf which started off the first tee amidst popping balloons, smoke bombs and general razzing. The telegraphic golf tournament with the NGAA in Tulsa resulted in a win for the local Scots 8 matches to 6. Lou Rowson, Texas Company, had the low net score with a 63.

Andy Kirk's Gassers squeezed out a close decision over H. C. Wood's Sandbaggers in the afternoon's baseball game by a 9-7 margin. Harold Dresser's catching and hitting featured the game for the Sandbaggers, while McMahan was a tower of strength at shortstop for the Gassers.

Tom Taggart's barbershop quartet scored a sensational hit before the evening's entertainment and is no doubt headed for the lights of Broadway.

It was a big day with everyone having the time of their lives.

See pictures on pages 47, 48, 49, and 50.

Athens Job Cores Ahead

Shell Oil Co. is coring at 8865 ft. with Union-Poindexter No. 1 in Sec. 12-3s-14w in the Athens area. Electric log was run to 8661 ft. U.S.L. No. 515-29 in Sec. 29-5n-17w in the Loma Verde area near Newhall has been abandoned at 5000 feet. Dolley No. 2 in Sec. 29-4s-12w in the Long Beach field is coring at 10,452 ft.